THE SUBSISTENCE HARVEST OF MIGRATORY BIRDS IN ALASKA

Technical Paper No. 197

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This research was supported by state and federal funds under a cooperative agreement between the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service, Anchorage (ADFG #COOP 90-002, FWS #14-16-0007-89-7753).

Division of Subsistence
Alaska Department of Fish and Game
Juneau, Alaska

December 1990

ABSTRACT

This report describes the contemporary subsistence harvests of migratory birds in Alaska during the mid-to-late 1980s, based on harvest survey information primarily collected by the Alaska Department of Fish and Game and the United States Fish and Wildlife Service. The report covers known harvest levels, total estimated harvest levels expanded to unsurveyed communities, seasonality of harvests, geographic distribution of harvests, and the role of migratory birds in the culture and economy of Alaska Native communities. Subsistence information derives from systematic random household harvest surveys conducted in 151 rural Alaska communities, representing a 59.0 percent sample of rural communities containing 69.7 percent of the rural population. In Alaska Native communities, surveys were conducted with the approval and assistance of regional tribal organizations and local governments. The report compares the subsistence harvest with migratory bird harvests by hunters from Alaska urban areas, based on state waterfowl stamp surveys administered by the Alaska Department of Fish and Game.

Based on these data sources, the total estimated annual harvest of migratory birds in Alaska during the mid-to-late 1980s was about 363,364 birds: 84,608 geese (23.3 percent), 259,741 ducks (71.5 percent), 5,955 cranes (1.6 percent), 6,894 swans (1.9 percent), and 6,166 "other migratory birds" (primarily shore and sea birds) (1.7 percent). Bird harvests by hunters from rural communities comprised 84.6 percent of the total Alaska harvest. Harvests by hunters from urban communities comprised 15.4 percent of the annual take.

The annual rural subsistence harvest of migratory birds during the mid-to-late 1980s was about 307,242 birds: 79,655 geese (25.9 percent), 210,448 ducks (68.5 percent), 5,283 cranes (1.7 percent), 6,894 swans (2.2 percent), and 4,962 "other migratory birds" (1.6 percent). The annual estimated subsistence harvest of migratory bird eggs in Alaska was 83,603 eggs, of which the majority were gull eggs (68.6 percent) or "other sea bird" eggs (15.8 percent). The subsistence bird harvest provided about 762,000 lbs of food to rural areas annually (including about 13,000 lbs of eggs), or about 7 lbs of food per rural resident (2.8 birds per rural resident). Generally, migratory birds comprised from 1 to 4 percent of a rural community's annual wild food harvests by weight.

For most rural communities, bird harvests were found to occur during traditional seasons which are timed in accordance with the availability of birds in traditional harvest territories rather than current federal or state hunting seasons. Spring, late summer (August), fall, and winter hunting periods are all common, depending upon the community and region. Based on reporting areas, 51.4 percent of the rural subsistence migratory bird harvest was taken during a "spring" period, 4.4 percent during a "mid-summer" period, and 44.3 percent during a "late summer-fall-winter" period.

Migratory birds were harvested in all rural areas, but total and mean harvest levels varied substantially between communities and areas. Mean per capita harvests of migratory birds were statistically higher in areas whose populations contained larger proportions of Alaska Natives. The three top ranked areas in terms of per capita bird harvests were the primarily Athabaskan Indian communities of the Yukon-Koyukuk-Lower Tanana area (19.1 lbs of birds per person, or 8.2 birds per person); the Inupiat-Yup'ik Eskimo communities of the Seward Peninsula-Norton Sound Area (18.1 lbs of birds per person, or 6.2 birds per person); and the Yup'ik Eskimo communities of the Yukon-Kuskokwim Delta (16.1 lbs of birds per person, or 5.3 birds per person). The largest subsistence migratory bird egg harvests occurred in the Alutiiq communities of the Alaska Peninsula (5.1 eggs per person).

In predominantly Alaska Native communities, most households were found to harvest migratory birds. Participation rates in predominantly non-Native rural areas tended to be lower. The percent of community households using migratory birds was higher than those harvesting due to the non-commercial distribution of birds between households along kinship lines. A conservative estimate of about 12,000 hunters harvested migratory birds in rural Alaska areas annually during mid-to-late 1980s, if one assumes one hunter in each household that reported taking migratory birds in surveyed communities. However, systematic counts of bird hunters in rural areas have never been made, and the actual number of hunters is probably somewhat higher than this minimum estimate.

At least 32 types of birds species were harvested by rural hunters. The types of birds harvested showed substantial variation across communities and areas. Harvests levels by species and seasons have been recorded for only a few communities and remain essentially undocumented. Based on reporting communities, the three top-ranked duck species were mallard, scoter, and pintail, and the three top-ranked geese species were large Canada geese, cackling Canada geese, and snow geese.

The report's findings indicate that the largest use of birds in Alaska during the mid-to-late 1980s were subsistence uses by rural Alaska communities, the greatest proportion of which are taken in predominantly Alaska Native areas. Alaska's subsistence bird harvest was five times larger than Alaska's urban bird harvest. Currently, the traditional subsistence bird harvest remains outside international management regimes. To bring this traditional use into the migratory bird management system will require innovative restructuring of current management regimes. Amending the 1916 international treaty to recognize subsistence uses is a first step, but by itself, this probably will not result in the inclusion of indigenous northern groups into the international bird management system. Developing one or more Subsistence Migratory Bird Committees with representation from each subsistence region may be a useful step toward bringing Alaska subsistence users into the international bird management system.

ACKNOWLEDGEMENTS

The authors are grateful to the residents of the 151 rural Alaska communities who generously participated in the subsistence harvest surveys summarized in this report. Without their patience, hospitality, and expertise, reports on subsistence in Alaska would not be possible. The authors also are grateful for the support and assistance of the regional tribal organizations and local governments (Indian Reorganization Act Councils and traditional village councils) of the rural communities covered in the report.

The authors thank Robert J. Walker and Thomas C. Rothe, Division of Wildlife Conservation, Alaska Department of Fish and Game, who analyzed the Alaska duck stamp data to produce the harvest estimates for urban Alaska places in this report. The authors also thank reviewers of the draft report, including Elizabeth Andrews, James Fall, Terry Haynes, Robert Leedy, and Cynthia Wentworth.

The authors are grateful for the work of the late James L. Baker, U.S. Fish and Wildlife Service, for his early interest in this cooperative project. Because of his support, this project became a reality.

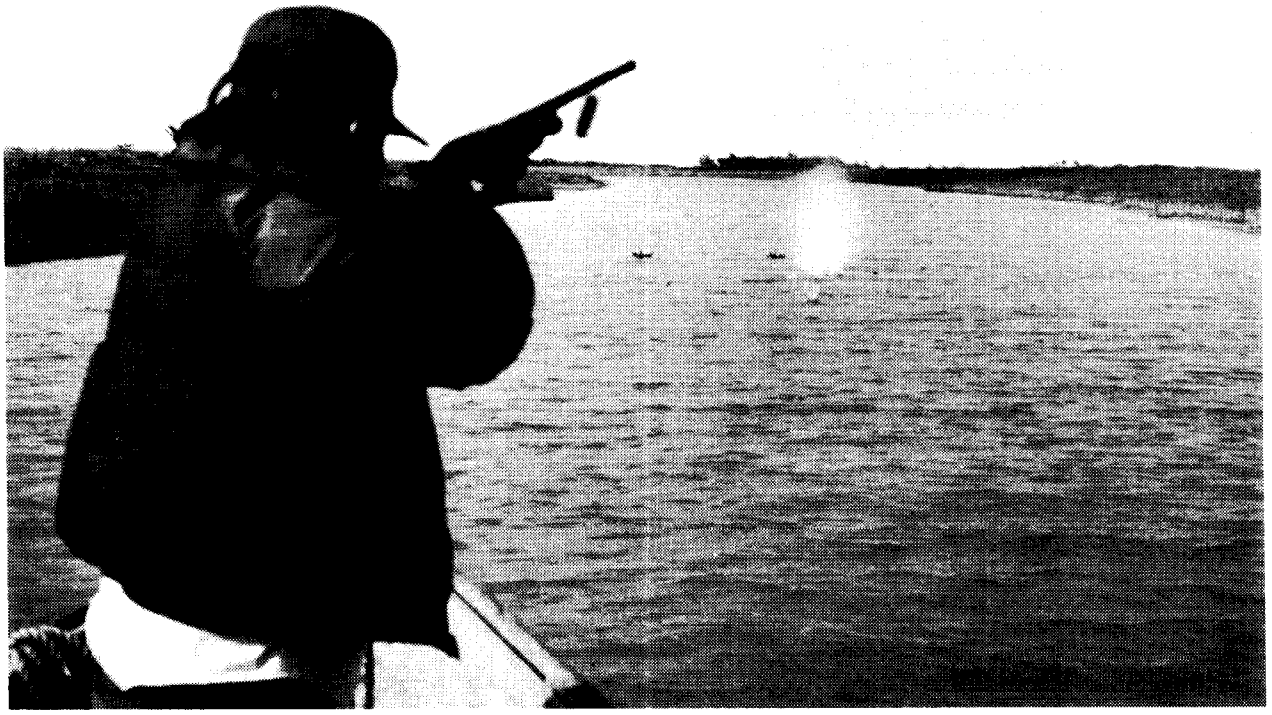
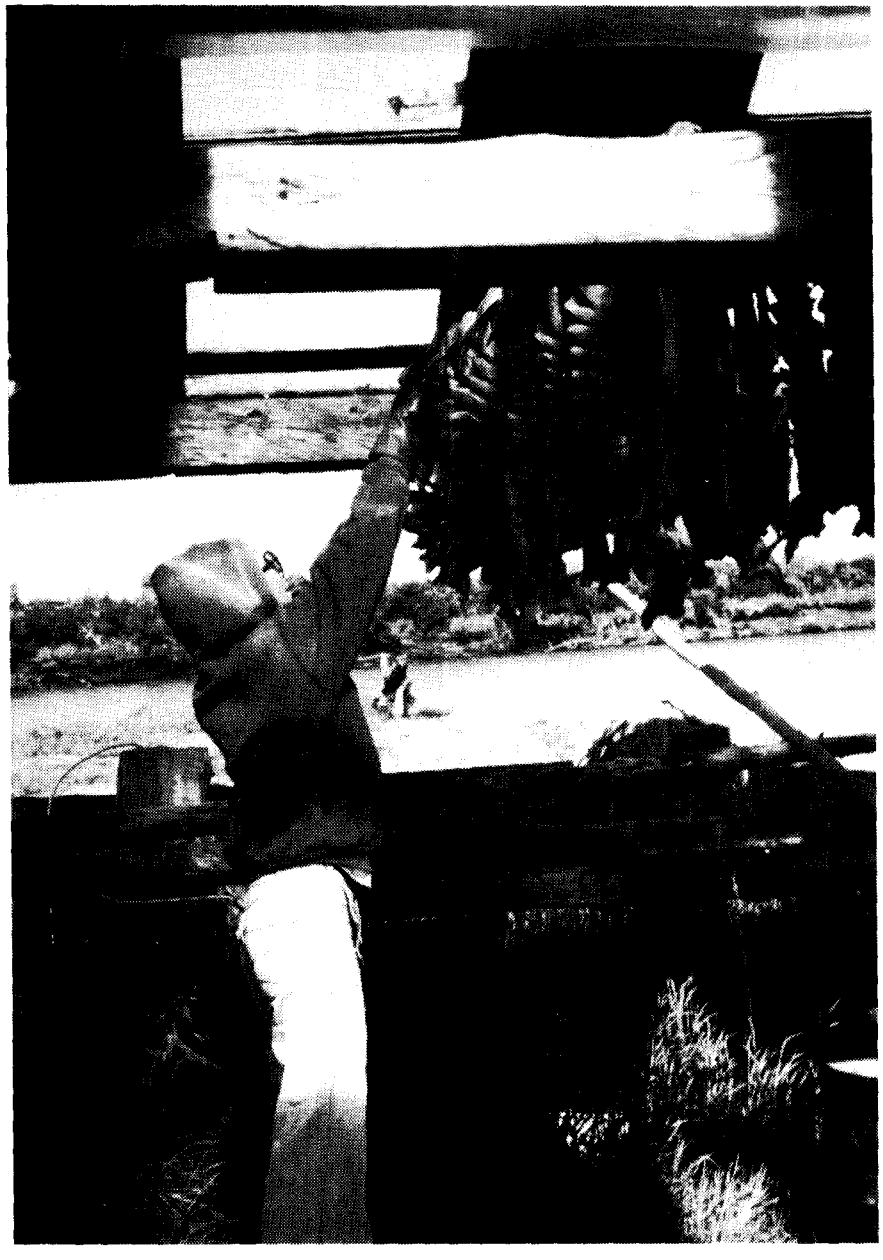


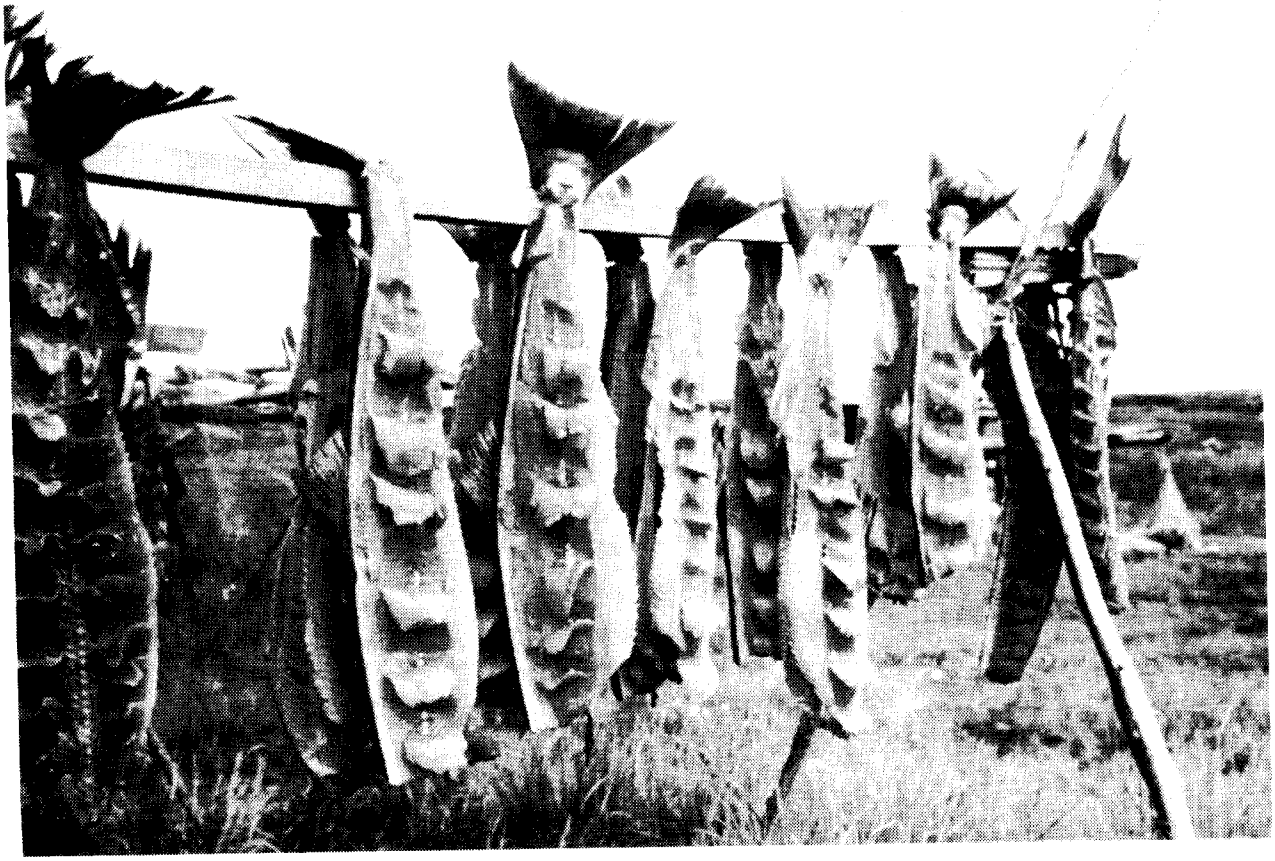
Plate 1. A Yup'ik Eskimo hunter shoots ducks on the Yukon-Kuskokwim Delta during August. This hunt follows cultural traditions particular to this rural Alaska area. The birds were taken during a hunt for beluga whales and seals by two adult men. In traditional Yup'ik culture, it is taught that spirit masters of animals willingly allow animals to be taken by humans for food as part of balanced, self-sustaining relationships within the natural universe. Bird hunts follow traditional rules that derive from cultural beliefs such as these. After this hunt, the birds were shared between households in two different villages and used for subsistence food and raw materials. Migratory birds are a highly-valued subsistence food on the Yukon-Kuskokwim Delta. Traditional hunting periods in this area are timed in accordance with the availability of birds, rather than current federal or state hunting seasons. (Photograph by Robert J. Wolfe)

Plate 2. A child helps her mother to pluck a bird taken for subsistence use in a Yukon-Kuskokwim Delta community. Learning subsistence traditions commonly occurs at early ages in rural Alaska communities. Young children observe relatives hunting and processing wild foods. In this case, a parent is allowing a pre-schooler to learn by doing. Processing wild foods typically is the role of females in traditional Yup'ik Eskimo cultural traditions. Females commonly control the final disposition of processed foods, deciding about distribution to other families and consumption. Feathers and down from migratory birds are commmonly retained for insulation in hand-made items (such as parkas) which are used locally. Whole plucked and gutted birds are commonly boiled in soups, including the heads and feet, which are considered edible parts. (Photograph by Robert J. Wolfe)

Plate 3. A snowmachine with sledge is used to haul propane on spring ice in a Yukon-Kuskokwim Delta community. Hunting birds during spring is affected by ice and snow conditions like these. Ice on rivers commonly deteriorates and breaks into open leads during spring bird migrations, making travel hazardous for hunting. In this picture taken during May, the ice is relatively firm in the center of the river, but rotten along the shore. Good travel conditions can improve hunting success, while poor ice and snow conditions decrease it. Snowmachines have been preferred to dog teams for winter travel since the mid-1960s on the Yukon-Kuskokwim Delta. In other rural Alaska areas, working dog teams continue to be used for winter trapping alongside snowmachines. The propane is used for cooking in houses heated with a combination of stove oil and wood. The equipment used in rural Alaska subsistence communities tends to be efficient, small-scale technology that can be owned and operated by family groups. The equipment is used to pursue traditional cycles of hunting and fishing activities with long historic roots in rural villages. (Photograph by Robert J. Wolfe)



Plates 4 and 5 (continued next page). Salmon dries on racks in a Yukon-Kuskokwim Delta community during June. Hunting migratory birds is one part of a larger pattern of subsistence activities in rural communities. Fishing during summer provides a major portion of the subsistence food supply in many rural areas. In some areas, bird hunting decreases or stops during the summer's subsistence fishing, which coincides with bird nesting and rearing. In other rural areas, hunting for particular species continues during summer, depending upon a number of ecological and economic factors. Food products shown drying on the racks include fillets, salted strips, backbones, and heads, all of which will be cooked and used by the family. (Photographs by Robert J. Wolfe)



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INTRODUCTION

Northern indigenous cultural groups in Alaska and Canada traditionally have used geese, ducks, cranes, and other birds as part of their annual cycle of subsistence activities.[1] Many Eskimo and Indian groups gather eggs and take migratory birds for food and raw materials during spring, summer, fall, and winter, following patterns of activities dating back thousands of years. These traditional uses are parts of unique cultural and economic systems in the subarctic and arctic regions (Berkes 1982; Blanchard 1984; Klein 1966; Pamplin 1985; Prevett et al 1983; Scott 1987; U.S. Department of the Interior 1980; Wolfe and Walker 1987).

In Alaska, subsistence harvests of migratory birds primarily occur in rural areas where fishing and hunting are major components of the regional economy (Wolfe and Walker 1987). In 1985, there were about 256 rural Alaska communities containing about 110,100 people of whom 48.1 percent were Alaska Native (Table 1, Appendix Table 27). Rural Alaska communities tend to be small (most have less than 1,000 people each) and geographically dispersed (Fig. 1). Most rural communities are supported by a traditional "mixed, subsistence-market" economy, where families support themselves by a combination of wage employment, commercial fishing or fur trapping, and subsistence food harvests (Wolfe and Walker 1987). Harvesting migratory birds is one type of traditional subsistence activity for producing wild foods. For Alaska Native communities with tribal governments, subsistence activities are part of ancient, indigenous cultural patterns. The traditional subsistence bird harvest occurs alongside a second type of bird harvest in Alaska -- a harvest of migratory birds during fall and winter by urban Alaska residents. Alaska's eight urban areas contained about 428,970 people in 1985 (5.6 percent Alaska Native) (Table 2, Appendix Table 27). Alaska's urban communities are supported by an industrial-capital economy, where families earn income in wage-market employment (primarily in industry, trade, government, and service sectors), and food is primarily imported from southern agricultural sources. Most urban Alaska residents are from Euro-American cultural traditions where bird hunting is for recreational purposes and separated from the economic sphere.

Despite its traditional prominence in indigenous northern cultures, the subsistence harvest of migratory birds has been poorly documented in the scientific literature for reasons discussed below. In Alaska, there has never been a complete, systematic description of the size or character of the annual rural subsistence take. An estimated annual subsistence take during the 1960s-1970s of about 239,740 migratory birds (105,120 geese, 125,900 ducks, 5,700 swans, 1,300 cranes, and 1,720 seabirds) and 50,600 eggs was made by the U.S. Fish and Wildlife Service for selected rural regions near federal refuges (U.S. Department of the Interior 1980:40). This subsistence harvest estimate was developed from harvest sources representing a variety of different methodologies and only a partial coverage of rural Alaska communities. The subsistence harvest compared with total annual bird harvests of about 4.1 million ducks and 341,000 geese by recreational hunters in the Pacific Flyway states, and 1.7 million geese and 15.1 million ducks in the United States (1978-79 hunting season; U.S. Department of the Interior 1980:39).

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1. In anthropological usage, "subsistence" refers to economic practices of cultural groups which have traditional economies marginally integrated with world markets, including modern hunting-gathering groups, pastoral groups, and horticultural groups. This report uses the term in its general anthropological sense. In Alaska, "subsistence" also is defined in federal and state laws as "customary and traditional uses" of wild renewable resources for food, materials, sharing, barter, customary trade, and craft sales. In Canada, other terms are commonly used for subsistence, such as "domestic use" and "country food". The international conventions governing migratory birds do not refer to "subsistence uses" as such, but to uses by indigenous groups for "nutritional and other essential needs", as discussed below.

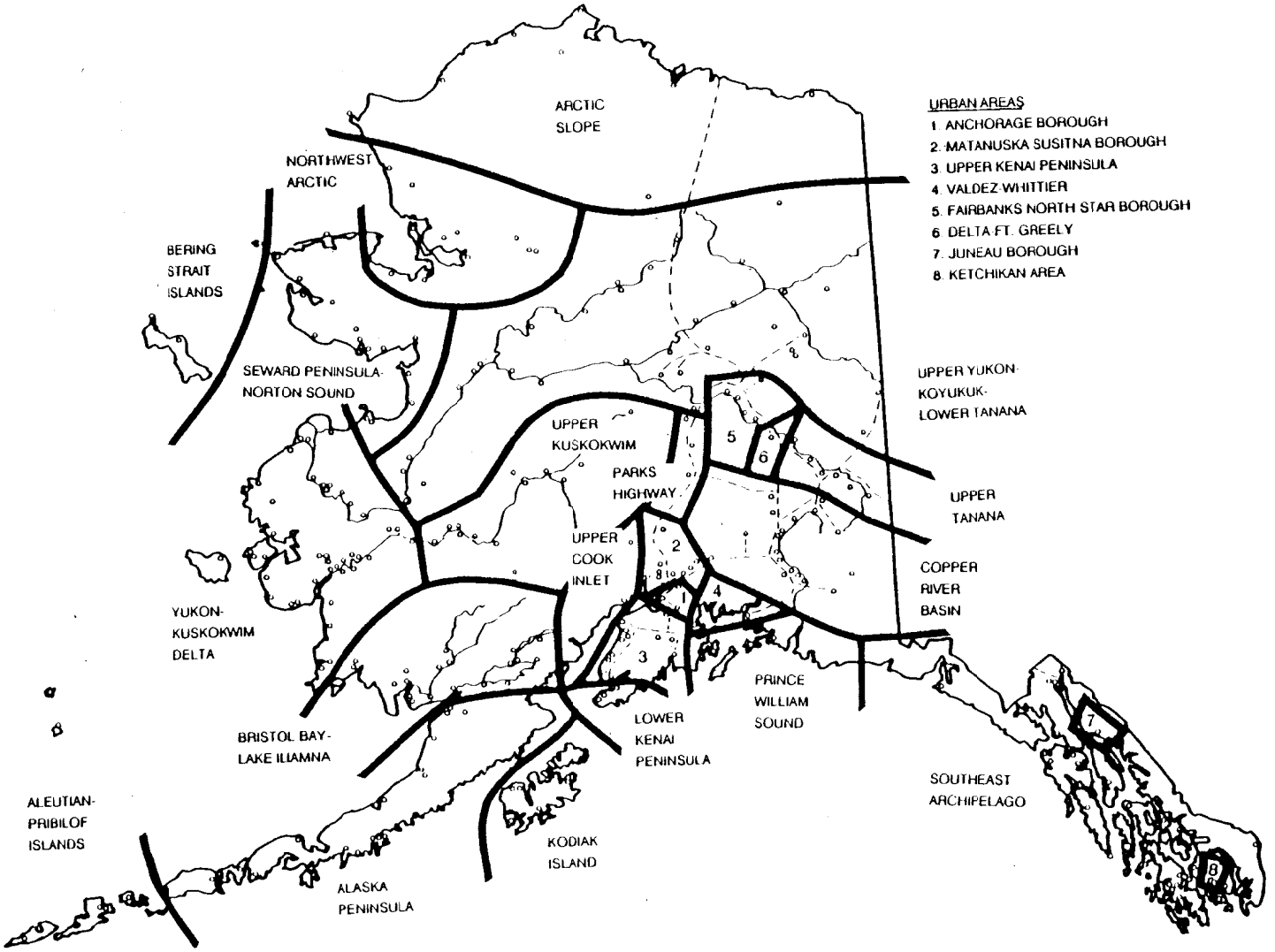

Fig. 1. Map of Rural and Urban Areas Used in the Report

TABLE 1. RURAL SAMPLE CHARACTERISTICS BY AREA

Rural Area	1985 Population	Percent Alaska Native	Total Rural Communities	Communities Sampled	Percent Sampled	Population Sampled Communities	Percent of Total Population
Southeast Archipelago	25960	30.3	32	32	100.0	25960	100.0
Prince William Sound	2496	15	4	4	100.0	2496	100.0
Lower Kenai Peninsula	783	47.6	3	3	100.0	783	100.0
Kodiak Island	12952	17	9	9	100.0	12952	100.0
Aleutian-Pribilof Islands	7565	14.3	9	0	.0	0	.0
Alaska Peninsula	3549	54.9	17	11	64.7	915	25.8
Bristol Bay	4980	75	18	13	72.2	4086	82.0
Yukon-Kuskokwim Delta	17325	63	41	19	46.3	11139	64.3
Upper Cook Inlet	434	57.4	2	2	100.0	434	100.0
Upper Kuskokwim River	1514	66.4	13	2	15.4	631	41.7
Upper Yukon-Koyukuk-Lower Tanana	7389	86.7	33	10	30.3	3074	41.6
Seward Peninsula-Norton Sound	6677	76.1	14	4	28.6	1078	16.1
Bering Strait Islands	1139	95.3	3	0	.0	0	.0
Northwest Arctic	5790	85.2	11	2	18.2	2918	50.4
Arctic Slope	5510	80.2	11	5	45.5	4233	76.8
Copper River Basin	3467	19.1	22	22	100.0	3467	100.0
Parks Highway	1274	5.9	7	7	100.0	1274	100.0
Upper Tanana River	1296	38.9	7	6	85.7	1259	97.1
Total	110100	48.1	256	151	59.0	76699	69.7

TABLE 2. URBAN SAMPLE CHARACTERISTICS BY AREA

Urban Area	1985 Population	Percent Alaska Native	1988-89 Duck Stamps Issued	Harvest Surveys Issued	Survey Issue Rate	Harvest Survey Responses	Survey Response Rate	Responses As Percent Of Stamps Sold
Ketchikan Borough	11975	11.1	87	43	49.4	8	18.6	9.2
Juneau Borough	26270	11.2	426	177	41.5	36	20.3	8.5
Valdez-Whittier	3615	5.8	18	9	50.0	3	33.3	16.7
Anchorage Borough	235269	5.1	3616	1471	40.7	264	17.9	7.3
Matanuska-Susitna Borough	35983	3.9	544	235	43.2	51	21.7	9.4
Upper Kenai Peninsula	38092	4.8	507	209	41.2	55	26.3	10.8
Delta-Ft.Greely Area	3359	1.6	171	67	39.2	18	26.9	10.5
Fairbanks North Star Borough	74407	5.5	800	327	40.9	85	26.0	10.6
Total Urban Alaska	428970	5.6	6169	2538	41.1	520	20.5	8.4

The purpose of this report is to present a systematic description of contemporary subsistence harvests of migratory birds in Alaska during the mid-to-late 1980s, based on harvest survey information primarily collected by the Alaska Department of Fish and Game and the United States Fish and Wildlife Service. The report covers known harvest levels, total estimated harvest levels (expanded to unsurveyed communities), seasonality of harvests, geographic distribution of harvests, and the role of migratory bird use in the cultures and economies of contemporary Alaska Native groups, where information exists. The report also compares subsistence harvests with bird harvests by hunters in non-rural Alaska in 1988-89. This basic information may allow for the beginning of informed assessments of the relative contribution of the subsistence harvest to the total annual waterfowl take in the United States, Canada, and Mexico.

SUBSISTENCE AND INTERNATIONAL MIGRATORY BIRD CONVENTIONS

The lack of basic scientific information on subsistence uses of migratory birds results from the peripheral role of indigenous peoples in migratory bird management systems (Berkes 1982; Berkes, George, and Preston 1991; Nakashima 1990; Pamplin 1985). Although well-established, the subsistence use of migratory birds by northern peoples has received uneven recognition in international waterfowl management conventions (Case 1984:280-281; Gottesman 1983). Two bilateral conventions recognize the legitimacy of uses by Natives or indigenous groups.[2] The 1976 United States-Soviet convention allows for the taking of migratory birds and the collection of their eggs by the "indigenous inhabitants" of the Alaska for "nutritional and other essential needs", as determined by the government. In contrast, the 1916 United States-Canada convention governing waterfowl use does not recognize subsistence waterfowl uses: it prohibits hunting and egg gathering between March 10 and September 1, which effectively prohibits the taking of migratory birds and eggs during traditional subsistence seasons, with a few narrow exceptions.[3] Currently, migratory birds in North America are managed in accordance with the Migratory Bird Treaty Act, which implements these treaties, of which the 1916 convention is most restrictive in terms of harvest. The provisions of the 1916 convention generally are unacceptable to northern cultural groups who use migratory birds. A protocol to amend the 1916 convention to conform with the 1976 U.S.-Soviet convention was signed by United States and Canadian administrations in 1979; however, the protocol was never ratified (U.S. Department of the Interior 1980, 1983). Efforts by the United States administration currently are underway to reach agreement with Canada on a revised protocol to provide a basis for managing subsistence hunting of migratory birds in Alaska and Canada during the period closed by the 1916 convention (Federal Register, Vol. 57, No. 6, January 9, 1992, p. 922-924).

Currently, many northern peoples face a legal dilemma. To continue their traditional hunting practices, they must break federal and state laws. Many northern peoples continue to hunt birds and gather eggs to feed their families as they have done for generations, even though it is illegal according to the 1916 convention. Other northern groups have felt compelled to halt, modify, or disguise their traditional subsistence uses for fear of criminal prosecution. United States and Canadian administrations face the problem of how to set

2. Convention for the Protection of Migratory Birds in Danger of Extinction, and their Environments, March 4, 1972, United States-Japan, 25 UST 3329, TIAS 7990; Convention Between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and Their Environment, Nov. 19, 1976 United States-U.S.S.R., 29 UST 4647, TIAS 9073.

3. Convention Between the United States and Great Britain for the Protection of Migratory Birds, August 16, 1916, TS 628; 39 Stat. 1702. "Indians" may take scoters for food and "Eskimos and Indians" may take auks, auklets, guillemots, murres, and puffins, and their eggs, for food and their skins for clothing at any time.

priorities to enforce a convention that does not adequately provide for the traditional subsistence harvest. What results in Alaska is a climate of mistrust and apprehension between rural subsistence users and management agencies over the annual subsistence bird harvest. The legal problems work to exclude northern groups from migratory bird management regimes alongside recreational hunters, conservationists, scientists, and government agencies.

Groups in opposition to legalizing traditional subsistence uses express concern about the effects of spring and summer subsistence takes on bird populations (U.S. Department of the Interior 1983; Williamson 1984). However, objective scientific assessments have not been made describing the role of the traditional spring and summer subsistence takes in the biology of particular bird populations. In part this is due to the lack of basic information on the size, timing, and geographic distribution of the traditional subsistence take in most areas.[4] Such information only can be gathered in cooperation with subsistence users (Usher et al 1985; Usher and Wenzell 1987). The laws criminalizing traditional subsistence uses make the cooperative collection of this basic subsistence information difficult. The lack of good information on actual subsistence practices in turn feeds the apprehensions of opposition groups.

METHODOLOGY

Rural Subsistence Harvest Surveys

During the 1980s, the Alaska Department of Fish and Game Division of Subsistence, the United States Fish and Wildlife Service, village tribal governments (Indian Reorganization Act (IRA) councils and traditional councils), particular Native regional organizations (including the Association of Village Council Presidents, Bristol Bay Native Association, Kawerak, Kodiak Area Native Association, Maniilaq, the North Pacific Rim, and Tanana Chiefs Conference), other governments (Central Council Tlingit and Haida Indian Tribes of Alaska, North Slope Borough, and Northwest Arctic Native Association), and rural subsistence hunters have worked cooperatively to collect reliable information on subsistence uses of wild resources in rural Alaska communities (cf., Fall 1990; Wolfe and Walker 1987). Subsistence harvests have been estimated with household surveys of hunters in select communities. All surveys have been conducted with the formal approval and support of regional or local Alaska Native organizations (traditional village councils, IRA Councils, or Alaska Native regional non-profit organizations). Alaska Native groups have cooperated in the studies in the hope that traditional subsistence uses can be legally recognized and protected. In each study, a surveyed hunter's anonymity was assured and participation was voluntary. Under these conditions, participation by subsistence hunters has been high in almost all surveyed communities (cf. Usher and Wenzell 1987 and Usher et al. 1985 for critiques of Native harvest surveys as a general methodology).

Subsistence harvests for at least one year's annual cycle have been collected with systematic surveys in 151 rural Alaska communities,[5] listed in Table 3 with the survey year,

4. As described in this report, most published estimates of bird harvests are single-year estimates collected during ethnographic studies of subsistence in particular northern communities (e.g., Nelson, Mautner, and Bane 1982). There are very few examples of regional harvest studies. Klein (1965) provided an estimate of subsistence bird harvests for the Yukon-Kuskokwim Delta, based on key respondent reports. The U.S. Fish and Wildlife Service and the Association of Village Council Presidents (a Yup'ik Eskimo tribal organization) have co-sponsored subsistence bird harvest surveys for the Yukon-Kuskokwim Delta between 1982-1989, which are summarized in this report.

5. For the purposes of this report, "rural areas" in Alaska were defined as areas where non-commercial harvests of wild fish and game are major components of the area's economy, which was the state's definition for implementing the state's subsistence

sample size, and researcher (Fall 1990). For this study, harvests of migratory birds were extracted and compiled to develop regional and state harvest estimates. Estimates of total rural subsistence bird harvests were developed by expanding harvests from surveyed to unsurveyed communities using the following procedure. Bird harvests for each surveyed community were converted to standard resource categories: "geese", "ducks", "swans", "cranes", "other migratory birds", "geese eggs", "duck eggs", "sea gull eggs", "other eggs" (primarily unspecified sea birds). Each community's harvests were standardized to a common year (1985, the mid-point of the decade) by multiplying the community's mean per capita harvest by the community's 1985 population. For the purposes of this study, the state was divided into 18 rural ecological and cultural areas, grouping villages with similar ecological and cultural characteristics as they pertain to migratory bird use (Fig. 1, Table 1). For the surveyed communities within each area, a mean per capita harvest by resource category was calculated by dividing the sum of the standardized harvests of surveyed communities by the sum of the 1985 populations of surveyed communities. Harvests for unsurveyed communities were estimated by multiplying the per capita harvests of the area's surveyed communities by the 1985 populations of unsurveyed communities. The total area harvest is the sum of the harvests for each community in the area. This method assumes that the best harvest estimator for unsurveyed communities is the simple mean of surveyed communities in the immediate area.

The surveyed communities represent a 59.0 percent sample of Alaska's rural communities containing 69.7 percent of Alaska's rural population (Table 1). Certain areas have complete coverage while in others surveyed communities represent only partial coverage. For instance, relatively poor coverage exists for the Northwest Arctic area (2 surveyed communities of 11 representing 50.4 percent of the population), the Seward Peninsula-Norton Sound area (4 surveyed communities of 14 representing 16.1 percent of the population), and the Upper Kuskokwim area (2 surveyed communities of 13 representing 41.7 percent of the population). Harvest estimates may lack precision for these areas in comparison with regions with larger sampling fractions. No systematic subsistence surveys were conducted during the 1980s in communities of the Aleutian and Pribilof islands and the Bering Strait islands (Saint Lawrence and Diomede islands), so these areas are excluded from estimates entirely. We believe the harvests of these two areas are likely to be too different from other areas to reliably expand to them from other surveyed areas. Relatively complete coverage of rural communities exists for the Southeast Archipelago, Prince William Sound, Lower Kenai Peninsula, Kodiak Islands, Upper Cook Inlet, Copper River Basin, and Parks Highway. The sampling fractions of other areas are listed in Table 1.

The survey years of the 151 communities are shown in Fig. 2 and Table 3. The survey years range between 1980 and 1989, with a median and mode of 1987 and a mean of 1986. The greatest number of surveys (92 communities, or 60.9 percent) were conducted in 1987, with the remaining surveys primarily distributed among other years between 1982 to 1989. For communities with multiple harvest years, the most recent or reliable survey year was utilized to represent the community's harvest level for the purpose of extrapolating total harvests; harvests for other years are analyzed elsewhere in the report for comparative purposes. For Alutiiq communities affected by the EXXON Valdez oil spill in March 1989, pre-spill years were selected to represent the communities' harvest patterns. For Yup'ik communities on the Yukon-Kuskokwim Delta, 1987 was selected because subsequent survey years begin to show evidence of attrition of particular villages from the survey sample.

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statute during the late 1980s. The lists of rural communities with subsistence use of wildlife on public lands in Alaska as determined by the Federal Subsistence Board, appears in the Federal Register v. 56, no. 2, and no. 236, 1991). Rural northern areas have traditional mixed, subsistence-market economic systems (Usher 1986; Wolfe and Walker 1987). In contrast, Alaska's non-rural areas are regions with industrial-capital economies fully integrated with world market networks. As stated above, bird harvests in non-rural areas are primarily recreational in nature, while those in rural areas of the Alaska and Canadian north are primarily for subsistence purposes.

TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
SOUTHEAST ARCHIPELAGO										
Angoon	87	3.75	139	46	33.0	521	652	77.9	Tlingit Indian, Euro-American	ADFG 1989
Beecher Pass	87	2.59	17	5	29.4	44	44	.0	Euro-American	ADFG 1989
Cape Pole	87	1.00	8	8	100.0	8	50	.0	Euro-American	ADFG 1989
Coffman Cove	87	2.82	66	41	62.0	186	272	.0	Euro-American	ADFG 1989
Craig	87	3.24	365	64	18.0	1182	1131	27.5	Euro-American, Tlingit Indian	ADFG 1989
Edna Bay	87	3.29	21	20	95.0	69	66	.0	Euro-American	ADFG 1989
Elfin Cove	87	3.10	19	13	68.0	60	47	.0	Euro-American	ADFG 1989
Gustavus	87	2.34	65	35	54.0	152	217	7.6	Euro-American	ADFG 1989
Haines	87	2.67	608	62	10.0	1623	1991	9.2	Euro-American	ADFG 1989
Hollis	87	2.47	32	29	91.0	79	75	17.8	Euro-American	ADFG 1989
Hoonah	87	3.20	219	62	28.0	700	917	61.5	Tlingit Indian, Euro-American	ADFG 1989
Hydaburg	87	3.45	110	35	32.0	379	463	86.8	Haida Indian, Euro-American	ADFG 1989
Hyder	87	2.00	39	33	85.0	78	81	.0	Euro-American	ADFG 1989
Kake	87	3.33	193	52	27.0	642	634	69.9	Tlingit Indian, Euro-American	ADFG 1989
Kasaan	87	2.90	14	14	100.0	40	83	42.5	Euro-American, Haida Indian	ADFG 1989
Klawock	87	3.53	224	52	23.0	790	716	44.8	Euro-American, Tlingit Indian	ADFG 1989
Klukwan	87	3.40	39	29	74.0	133	153	81.8	Tlingit Indian, Euro-American	ADFG 1989
Metlakatla	87	3.72	418	64	15.0	1554	1428	73.1	Tlingit Indian, Euro-American	ADFG 1989
Meyers Chuck	87	3.00	10	10	100.0	30	53	.0	Euro-American	ADFG 1989
North Whale Pass	87	2.80	18	18	100.0	51	83	5.9	Euro-American	ADFG 1989
Pelican	87	2.91	82	48	59.0	239	234	27.1	Euro-American, Tlingit Indian	ADFG 1989
Petersburg	87	3.07	1217	54	4.0	3739	3186	13.5	Euro-American, Tlingit Indian	ADFG 1989
Point Baker	87	1.84	19	19	100.0	35	35	3.0	Euro-American	ADFG 1989
Port Alexander	87	2.86	37	34	92.0	106	131	5.9	Euro-American	ADFG 1989
Port Protection	87	2.15	27	25	92.6	58	58	4.0	Euro-American	ADFG 1989
Saxman	87	3.41	76	36	47.0	259	273	80.0	Tlingit Indian, Euro-American	ADFG 1989
Sitka	87	2.79	2871	296	10.0	8016	8160	19.7	Euro-American, Tlingit Indian	ADFG 1989
Skagway	87	2.86	204	60	29.0	583	637	6.5	Euro-American	ADFG 1989
Tenakee Springs	87	2.16	44	31	70.0	95	142	4.6	Euro-American, Tlingit Indian	ADFG 1989
Thorne Bay	87	3.05	157	52	33.0	479	412	.0	Euro-American	ADFG 1989
Wrangell	87	2.80	1013	75	7.4	2839	2387	37.6	Euro-American, Tlingit Indian	ADFG 1989
Yakutat	87	3.49	169	48	28.0	589	682	48.0	Euro-American, Tlingit Indian	ADFG 1989

TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS
(CONTINUED)

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
PRINCE WILLIAM SOUND										
Chenega Bay	85	3.60	17	16	94.0	60	60	77.0	Alutiiq Eskimo	Stratton and Chissum 1986
Cordova	85	2.70	853	206	24.2	2303	2307	15.2	Euro-American, Eyak Indian	Stratton 1989
San Juan Bay	84	2.80	6	6	100.0	17	17	.0	Euro-American	Stratton and Chissum 1986
Tatitlek	88	4.00	31	19	61.3	124	112	84.2	Alutiiq Eskimo	Stratton 1990
LOWER KENAI PENINSULA										
English Bay	87	3.78	40	33	82.5	151	192	79.0	Alutiiq Eskimo	Stanek 1985
Port Graham	87	2.86	63	54	85.7	180	188	87.6	Alutiiq Eskimo	Stanek 1985
Seldovia	82	3.50	172	35	20.3	600	403	24.4	Euro-American, Dena'ina Indian	Reed 1985
KODIAK ISLAND										
Akhiok	83	3.81	27	21	77.8	103	109	96.0	Alutiiq Eskimo	Kodiak Area Native Association
Chiniak	82	3.91	89	55	61.8	290	290	14.0	Euro-American, Alutiq Eskimo	Kodiak Area Native Association
Karluk	82	3.95	26	20	76.9	103	114	100.0	Alutiiq Eskimo	Kodiak Area Native Association
Kodiak City	82	3.32	2484	155	78.0	8349	6173	14.0	Euro-American, Alutiq Eskimo	Kodiak Area Native Association
Kodiak Coast Guard St	82	2.42	828	76	9.2	2005	1731	.6	Euro-American	Kodiak Area Native Association
Larsen Bay	82	4.16	44	32	74.0	180	217	68.0	Alutiiq Eskimo, Euro-American	Kodiak Area Native Association
Old Harbor	82	3.79	94	76	80.9	356	344	92.0	Alutiiq Eskimo	Kodiak Area Native Association
Ouzinkie	82	3.34	70	32	45.7	234	235	82.0	Alutiiq Eskimo	Kodiak Area Native Association
Port Lions	82	3.25	89	55	61.8	290	302	68.0	Alutiiq Eskimo, Euro-American	Kodiak Area Native Association
ALASKA PENINSULA										
Chignik Bay	84	4.30	30	19	68.0	121	129	86.6	Alutiiq Eskimo	Morris 1987
Chignik Lagoon	84	3.40	22	17	77.0	74	40	75.4	Alutiiq Eskimo, Euro-American	Morris 1987
Chignik Lake	84	5.00	31	23	74.0	156	164	99.1	Alutiiq Eskimo	Morris 1987
Egegik	84	2.30	42	25	60.0	97	112	77.6	Yup'ik Eskimo, Euro-American	Morris 1987
False Pass	88	3.15	22	20	91.0	69	77	85.7	Aleut	Stanek 1990
Ivanof Bay	84	3.70	10	6	60.0	37	49	100.0	Alutiiq Eskimo	Morris 1987
Nelson Lagoon	87	3.77	18	13	72.0	68	44	93.2	Aleut	Stanek 1990
Perryville	84	4.20	27	20	74.0	115	137	100.0	Alutiiq Eskimo	Morris 1987
Pilot Point	87	3.59	18	17	94.0	65	79	86.4	Yup'iK Eskimo	Fall and Morris 1988
Port Heiden	87	2.78	37	37	100.0	103	108	64.1	Yup'ik Eskimo, Euro-American	Fall and Morris 1988
Ugashik	87	2.00	5	5	100.0	10	10	100.0	Yup'ik Eskimo	Fall and Morris 1988

TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS
(CONTINUED)

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
BRISTOL BAY										
Dillingham	84	2.90	695	153	22.0	2004	2141	57.0	Yup'ik Eskimo, Euro-American	Fall et al 1986
Ekwok	87	3.34	32	29	90.6	107	107	92.2	Yup'ik Eskimo	Fall and Schichnes 1990
Igiugig	83	6.30	11	3	27.0	70	38	75.8	Yup'ik Eskimo, Euro-American	Morris 1986
Iliamna	83	3.89	36	20	56.0	140	126	40.4	Euro-American, Dena'ina Indian	Morris 1986
Kokhanok	83	5.30	27	19	70.0	143	68	96.4	Yup'ik Eskimo	Morris 1986
Koliganek	87	3.88	48	42	87.5	186	161	95.7	Yup'ik Eskimo	Fall and Schichnes 1990
Levelock	89	2.70	33	27	81.8	89	109	87.3	Yup'ik Eskimo	Fall and Schichnes 1990
Manokotak	85	5.24	59	54	91.5	309	309	92.9	Yup'ik Eskimo	Schichnes and Chythlook 1988
New Stuyahok	87	4.77	74	40	54.0	353	339	94.0	Yup'ik Eskimo	Wolfe et al 1983
Newhalen	83	4.80	26	11	42.0	125	165	94.3	Yup'ik Eskimo	Morris 1986
Nondalton	83	5.19	54	21	38.8	280	234	93.1	Dena'ina Indian	Morris 1986
Pedro Bay	83	2.95	21	17	80.9	62	70	93.9	Dena'ina Indian	Morris 1986
Port Alsworth	83	3.62	21	13	61.9	76	67	1.8	Euro-American	Morris 1986
YUKON-KUSKOKWIM DELTA, SOUTH COAST										
Quinhagak	82	4.36	98	12	12.2	427	453	97.6	Yup'ik Eskimo	Wolfe et al 1983
Tuntutuliak	87	4.63	72	20	27.8	335	293	96.8	Yup'ik Eskimo	Copp 1987
MID COAST										
Chevak	87	5.17	109	43	39.4	562	532	95.5	Yup'ik Eskimo	Copp 1987
Hooper Bay	87	5.17	138	45	32.6	712	686	95.4	Yup'ik Eskimo	Copp 1987
Scammon Bay	87	5.17	64	30	46.9	330	304	96.4	Yup'ik Eskimo	Copp 1987
Tununak	87	4.63	70	25	35.7	326	318	95.0	Yup'ik Eskimo	Copp 1987
NORTH COAST										
Emmonak	87	5.17	122	43	35.2	633	613	91.2	Yup'ik Eskimo	Copp 1987
Kotlik	87	5.17	92	24	26.1	474	409	95.6	Yup'ik Eskimo	Copp 1987
LOWER KUSKOKWIM RIVER										
Aniak	87	4.63	121	43	35.5	560	481	63.9	Yup'ik Eskimo, Euro-American	Copp 1987
Kwethluk	87	4.63	128	34	26.6	591	546	97.1	Yup'ik Eskimo	Copp 1987
Nunapitchuk	87	4.63	83	33	40.0	383	356	98.7	Yup'ik Eskimo	Copp 1987
Oscarville	87	4.63	14	9	64.0	66	63	100.0	Yup'ik Eskimo	Copp 1987
Tuluksak	87	4.63	79	22	30.5	367	321	96.6	Yup'ik Eskimo	Copp 1987

TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS
(CONTINUED)

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
LOWER YUKON RIVER										
Marshall	87	5.17	56	24	42.9	289	281	93.9	Yup'ik Eskimo	Copp 1987
Mountain Village	87	5.17	141	43	30.5	728	682	92.5	Yup'ik Eskimo	Copp 1987
Pitka's Point	87	5.17	22	12	54.5	115	106	93.2	Yup'ik Eskimo	Copp 1987
Russian Mission	87	5.17	51	20	39.2	265	231	94.1	Yup'ik Eskimo	Copp 1987
St Mary's	87	5.17	96	34	35.4	495	458	88.0	Yup'ik Eskimo	Copp 1987
BETHEL	87	3.41	1382	161	11.7	4707	4006	67.6	Yup'ik Eskimo, Euro-American	Copp 1987
UPPER COOK INLET										
Western Susitna	84	3.30	64	44	68.8	165	165	.0	Euro-American	Stanek 1987
Tyonek	83	3.40	80	80	100.0	273	269	92.9	Dena'ina Indian	Fall, Foster and Stanek 1984
UPPER KUSKOKWIM										
McGrath	84	3.00	181	181	100.0	537	509	40.0	Euro-American, U. Kuskokwim Indian	Stokes 1984
Nikolai	84	3.70	29	29	100.0	107	122	94.4	U. Kuskokwim Indian	Stokes 1984
UPPER YUKON-KOYUKUK-LOWER TANANA										
Allakaket	84	3.12	58	48	82.7	181	188	96.9	Koyukon Indian, Inupiat Eskimo	Strong and McIntosh 1985
Beaver	85	2.50	33	31	93.0	83	80	98.5	Gwich'in Indian, Koyukon Indian	Sumida and Alexander 1988
Bettles	84	2.28	37	32	86.5	84	86	28.7	Euro-American, Koyukon Indian	Strong and McIntosh 1985
Fort Yukon	87	2.95	212	72	34.0	626	678	71.4	Gwich'in Indian, Euro-American	Sumida and Andersen 1990
Galena	85	3.30	211	74	35.0	690	947	45.8	Euro-American, Koyukon Indian	Marcotte 1990b
Hughes	82	4.30	22	19	86.0	94	92	97.3	Koyukon Indian	Marcotte and Haynes 1985
Huslia	83	3.40	57	56	98.0	192	272	94.7	Koyukon Indian	Marcotte and Haynes 1985
Minto	84	3.73	48	45	94.0	179	209	92.2	Tanana Indian	Andrews 1988
Stevens Village	84	3.00	30	30	100.0	90	97	91.2	Koyukon Indian	Sumida and Alexander 1988
Tanana	88	2.91	128	45	35.2	346	425	79.1	Koyukon Indian	Case and Halpin 1990
SEWARD-NORTON SOUND										
Brevig Mission	89	4.00	43	15	35.0	172	165	100.0	Yup'ik Eskimo	Conger and Magdanz 1990
Golovin	89	3.60	41	33	80.0	154	131	97.7	Yup'ik Eskimo	Conger and Magdanz 1990
Shishmaref	89	3.70	118	21	18.0	438	410	93.7	Yup'ik Eskimo	Conger and Magdanz 1990
Stebbins	80	5.52	60	12	20.0	331	372	95.5	Yup'ik Eskimo	Wolfe 1981

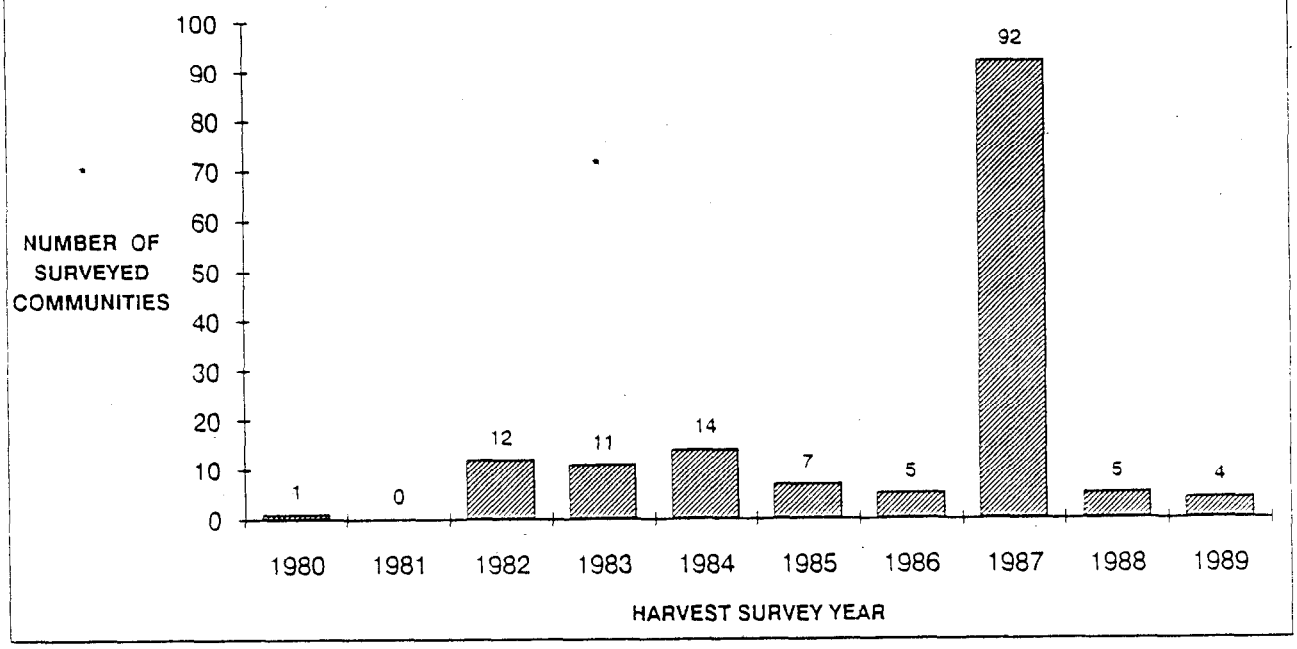
TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS
(CONTINUED)

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
NORTHWEST ARCTIC										
Kivalina	83	5.74	47	47	100.0	270	285	98.3	Inupiat Eskimo	Burch 1985
Kotzebue	86	3.50	765	90	11.8	2681	2633	76.6	Inupiat Eskimo, Euro-American	Georgette and Loon 1992
ARCTIC SLOPE										
Barrow	88	3.23	937	110	11.7	3223	3075	75.9	Inupiat Eskimo, Euro-American	Braund and Associates 1989a
Kaktovik	86	3.50	53	42	79.0	188	209	89.7	Inupiat Eskimo	Pedersen 1990
Nuiqsut	85	5.30	76	40	53.0	400	337	87.0	Inupiat Eskimo	Pedersen 1992b
Point Lay	87	2.65	43	25	58.1	145	104	92.6	Inupiat Eskimo	Pedersen 1992a
Wainwright	88	3.90	128	114	89.0	411	508	91.9	Inupiat Eskimo	Braund and Associates 1989b
COPPER RIVER BASIN										
Chistochina	87	2.71	29	28	97.0	79	79	48.7	Euro-American, Ahtna Indian	Stratton and Fall 1990
Chitina	87	1.83	19	18	95.0	35	35	51.5	Euro-American, Ahtna Indian	Stratton and Fall 1990
Copper Center	87	3.06	161	39	24.2	493	493	44.3	Euro-American, Ahtna Indian	Stratton and Fall 1990
East Glenn Highway	87	3.25	67	17	25.4	217	217	5.4	Euro-American, Ahtna Indian	Stratton and Fall 1990
Gakona	87	2.98	70	25	35.7	209	209	2.4	Euro-American, Ahtna Indian	Stratton and Fall 1990
Glennallen	87	2.76	170	44	25.9	469	469	1.5	Euro-American, Ahtna Indian	Stratton and Fall 1990
Gulkana	87	3.05	22	20	90.9	67	67	98.4	Euro-American, Ahtna Indian	Stratton and Fall 1990
Kenny Lake	87	3.45	93	25	21.5	321	321	3.2	Euro-American, Ahtna Indian	Stratton and Fall 1990
Lake Louise	87	2.06	19	17	89.5	39	39	2.9	Euro-American, Ahtna Indian	Stratton and Fall 1990
McCarthy Road	87	2.00	19	17	89.5	38	38	5.9	Euro-American, Ahtna Indian	Stratton and Fall 1990
Mentasta Lake	87	3.08	25	24	96.0	77	77	86.5	Euro-American, Ahtna Indian	Stratton and Fall 1990
Mentasta Pass	87	2.40	11	10	90.9	26	26	16.7	Euro-American, Ahtna Indian	Stratton and Fall 1990
Nabesna Road	87	2.83	13	12	92.3	37	37	14.7	Euro-American, Ahtna Indian	Stratton and Fall 1990
North Slana Homestea	87	1.75	35	8	22.9	61	61	.0	Euro-American	Stratton and Fall 1990
Paxson	87	2.29	17	14	82.4	39	39	12.5	Euro-American, Ahtna Indian	Stratton and Fall 1990
Sourdough	87	2.56	10	9	90.0	26	26	.0	Euro-American	Stratton and Fall 1990
Slana	87	2.27	25	22	88.0	57	57	6.0	Euro-American, Ahtna Indian	Stratton and Fall 1990
So Slana Homestead	87	2.82	66	17	25.8	186	186	.0	Euro-American	Stratton and Fall 1990
So Wrangell Mts	87	2.07	23	14	60.9	48	48	.0	Euro-American	Stratton and Fall 1990
Tazlina	87	3.04	120	31	25.8	365	365	26.9	Euro-American, Ahtna Indian	Stratton and Fall 1990
Tonsina	87	3.10	96	34	35.4	297	297	25.5	Euro-American, Ahtna Indian	Stratton and Fall 1990
West Glenn Highway	87	2.65	106	21	19.8	281	281	.0	Euro-American	Stratton and Fall 1990

TABLE 3. SURVEYED RURAL COMMUNITIES BY AREA AND SAMPLE CHARACTERISTICS
(CONTINUED)

	YEAR	MEAN HOUSE-HOLD SIZE	TOTAL HOUSE-HOLDS	SAMP-LED HOUSE-HOLDS	SAMPLE FRAC-TION	POPULA-TION STUDY YEAR	1985 POP	PER CENT NATIVE	PREDOMINANT CULTURAL GROUPS	SOURCE
PARKS HIGHWAY										
Anderson	87	2.56	221	53	24.0	655	566	3.4	Euro-American	Marcotte 1990a
Cantwell	82	2.91	47	43	91.0	137	91	31.5	Euro-American, Ahtna Indian	Stratton and Georgette 1984
Chase	86	2.63	30	17	56.7	79	79	.0	Euro-American	Stanek, Foster and Fall 1988
Gold Creek	86	2.00	6	5	83.3	12	12	43.0	Euro-American	Stanek, Foster and Fall 1988
Healy	87	3.17	271	50	18.4	860	414	3.9	Euro-American	Marcotte 1990a
Hurricane-Broad Pass	86	3.42	12	8	66.7	41	41	35.0	Euro-American	Stanek, Foster and Fall 1988
McKinley Park Village	87	2.09	88	25	28.4	184	65	1.5	Euro-American	Marcotte 1990a
UPPER TANANA										
Chisana	87	2.17	6	6	100.0	13	13	.0	Euro-American	Stratton and Fall 1990
Dot Lake	87	3.27	20	15	75.0	66	77	40.8	Euro-American, Upper Tanana Indian	Marcotte, et al 1992
Northway	87	3.60	90	45	50.0	324	239	76.5	Upper Tanana Indian, Euro-American	Marcotte, et al 1992
Tanacross	87	2.74	34	27	79.4	93	149	97.3	Upper Tanana Indian	Marcotte, et al 1992
Tetlin	87	3.99	29	15	51.7	116	89	100.0	Upper Tanana Indian	Marcotte, et al 1992
Tok	87	2.95	367	93	25.3	1081	692	11.0	Euro-American, Upper Tanana Indian	Marcotte, et al 1992

FIGURE 2. YEAR OF HARVEST SURVEY FOR THE 151 SAMPLED RURAL COMMUNITIES



Because of the range of sampled years, the bird harvest information in this report cannot be said to represent any particular year. The distribution of the survey years suggest that the bulk of the subsistence harvest surveys (74.7 percent) represent the mid-to-late 1980s period, which is how the summary harvest statistics are characterized in the report. For expansion purposes, 1985 was chosen as the standard population year because it served as the mid-point of the decade. Later year populations could have been chosen, resulting in somewhat larger total harvests estimates because of the increasing rural population size during the 1980s decade; however, village population estimates by the Alaska Department of Labor become less reliable as the decade increases because they rely on demographic projection formulas instead of actual census data for many communities. The 1985 population estimates were believed to be more accurate reflections of village population sizes than later estimates. Population estimates from the 1990 federal census were not available at the time of the project.

Harvest information was gathered in most communities employing a retrospective interview of hunters from a randomly drawn sample of households. In other communities, complete census sample designs were employed. The sampled fractions of households are listed in Table 3; each referenced study should be consulted for details of survey methodologies. In most communities, hunters were asked to recall the subsistence harvests of particular resource categories made by household members during the previous year. Categories of birds were among many resource categories covered in the subsistence surveys. Most subsistence surveys asked about general bird categories (such as "ducks", "geese", "swans", "cranes," and "eggs"), so harvests at the species level cannot be estimated in most places. The harvests of sampled households were expanded to unsampled households within each community to produce an estimate of total community harvest. It is this total expanded community estimate that is the basis for the regional and state harvest estimates in this report. In 77 communities, harvest information by species was gathered, and this information is summarized in Appendix Table 6. We believe that the large variation between communities in species composition does not allow us to estimate the species composition of the total rural harvest from surveyed communities at this time.

With a few notable exceptions, studies were conducted by staff of the Division of Subsistence, Alaska Department of Fish and Game, a state research group mandated to collect subsistence information to assist the state and federal governments in implementing state and federal laws that protect subsistence uses in rural areas (Fall 1990). Certain community surveys were conducted by other agencies. The survey of communities in the Yukon-Kuskokwim Delta was conducted under private contract let by the U.S. Fish and Wildlife Service (Copp 1988). The survey was part of a cooperative waterfowl management agreement between the Association of Village Council Presidents (the regional tribal association) and federal and state agencies (Pamplin 1985). The survey covered migratory birds only and results were reported by subregion rather than by community. The surveys at Barrow and Wainwright (Braund, S.R. and Associates and Institute of Social and Economic Research 1988, 1989a, 1989b) were conducted under private contract let by the federal Minerals Management Service, U.S. Department of the Interior, as part of socioeconomic impacts assessments of oil development along the arctic outer continental shelf.

Certain conventions were followed to make data sets compatible across the different studies. The original conversion factors for each individual study were used to calculate "usable weights", except for the following: for Southeast communities, the conversion factor used for geese was 4.0 lbs; for Kodiak Island communities, conversion factors used were 4.0 lbs for geese and 1.5 lb for ducks. For the Yukon-Kuskokwim Delta harvests, per capita pounds were adjusted to "usable weights" by a factor of .75 for all bird categories, since the original data were reported as "total pounds biomass" (Copp 1988). For Nome, a regional center in the Seward Peninsula-Norton Sound area, per capita bird harvests were assumed to be .45 of the regional village means. This derives from the relationship of two other regional

centers (Dillingham and Barrow) to their respective regional villages. For Nome, per capita egg harvests were assumed to be .086 of the regional village means. Per capita harvests were not expanded to Prudhoe Bay and Deadhorse on the Arctic Slope, since these are industrial enclaves where local hunting is not permitted by industry. The bird and egg harvests for Gambell, from Little and Robbins (1984), are reported in Appendix Table 1, but were not extrapolated to any other community. This is because they were based on observations and interviews with key respondents and represent in part cliff bird harvests relatively unique to that community. The original data on egg harvests in Southeast communities used the category "seabird eggs"; these harvests are reported in this paper as "other eggs" and include primarily gull eggs, but also some eggs of other seabirds (such as puffins and murres). For Yukon-Kuskokwim Delta "Additional South Coast" communities, per capita egg harvests were extrapolated from the "South Coast" stratum of Copp (1988). Egg harvests were not collected for Upper Cook Inlet communities in the original studies. Harvest of eggs by residents of communities of the Upper Yukon-Koyukuk-Lower Tanana area, Parks Highway area, and Upper Kuskokwim area was assumed to not occur, based on information provided by key informants.

Alaska Waterfowl Stamp Harvest Surveys of Urban Residents

Estimates of migratory bird harvests for urban Alaska areas were developed using results of a mailed harvest survey by the Division of Wildlife Conservation, Alaska Department of Fish and Game. The urban areas are listed in Table 2, and include eight population centers. A harvest survey was mailed to a randomly drawn sample of 2,538 of 6,169 purchasers (41.1 percent) of state waterfowl stamps in 1988-89. Purchasing state waterfowl stamps was legally required to hunt migratory birds in Alaska and compliance by urban hunters was thought to be relatively good. Rural subsistence hunters do not consistently participate in duck stamp programs to allow for the use of the information to estimate the rural take. Of the randomly-drawn sample, 520 persons (20.5 percent) returned harvest surveys, representing an 8.4 percent sample of all state waterfowl stamp sales. To obtain the estimated total bird harvest by urban Alaska residents, returned surveys were summarized by zip code of the hunter's residency and expanded to the total number of active hunters in each urban area based on federal duck stamp purchases corrected for philatelic sales (federal stamp sales are a better measure of total hunters than are state stamp sales).

Seasonal Round Information

Seasonality information was compiled from individual published reports on subsistence uses in rural Alaska areas. In general, seasonality information was gathered by field researchers using key respondent interviews, augmented by some field observation. It was commonly stated in the published sources that the start, duration, and finish of subsistence activities often shifted by several weeks from one year to the next, depending upon weather and other natural factors. Most seasonal rounds in the literature appear to accommodate these variations. However, some variation between communities may be due to methodological differences in the treatment of this year-to-year variation by researchers. Also, some variation between communities may be due to methodological differences in the treatment of occasional hunting periods. For instance, it is likely that some researchers have chosen not to include occasional bird harvests during summer as part of a community's seasonal round, while other researchers have chosen to include it. The seasonal rounds presented in this report do not include harvest seasons for resident ptarmigan and grouse, which differ substantially from those of migratory birds.

Accuracy of Native Harvest Surveys

The accuracy of Native harvest surveys in the arctic and subarctic north has been called to question (Usher et al. 1985; Usher and Wenzell 1987). There are a variety of special methodological problems that must be overcome to produce reliable information on subsistence patterns, including memory attrition in retrospective recall surveys, variant species classification systems, species misidentifications, appropriate units of measure, appropriate sampling universes, and language differences, all which work to confuse accurate documentation. As important are the limitations created by the difficult political and legal contexts of harvest surveys, which may result in bias in samples and in reports by subsistence hunters. The subsistence use of migratory birds is a prime example of a sensitive resource issue in political and legal arenas.

The select studies summarized in this report were designed with these special problems in mind. The information used in this report was drawn from studies which met certain rigorous methodological standards: approval by local Alaska Native governing bodies; protection of respondent confidentiality; random selection of surveyed households; high survey response rates; bilingual translation; and standardized survey methodologies (cf., Fall 1990). Nevertheless, despite assurances during the survey regarding the protection of confidentiality of respondents, strategic responses by hunters fearful of legal prosecution may have resulted in inaccurate harvest reports in particular instances. To the extent this bias exists, it probably is in the direction of under-reporting harvests. While the data set as a whole probably provides a relatively accurate, general picture of subsistence uses of waterfowl, in specific cases the information may be an under-estimate or incomplete documentation of particular variables, such as harvest levels for particular communities or bird species, or timing of harvests in particular areas. To the extent that future rule-making requires precise specific measures (such as for establishing appropriate season opening dates or species harvest guidelines for particular communities), additional cooperative programs by Alaska Native groups, researchers, and agencies are essential, as discussed later.

One major methodological question is the extent to which single-year surveys can adequately represent the subsistence harvests of an area (Fig. 2). The answer is, that single-year surveys are only partial representations of subsistence harvest patterns because of substantial between-year variability of subsistence uses in particular communities. The single year's observations on which the current data base depend create major limitations on our descriptions and understanding of subsistence uses of migratory birds in rural Alaska communities.

The limitations of single-year surveys can be illustrated with the question of species composition of the rural subsistence harvest. Currently, there appears in the data to be significant variability between communities and areas in the species composition of the subsistence bird harvest. This variability is undoubtedly due to a variety of ecological and cultural factors, but also due to methodological factors connected to the single-year study. We know that the appearance of particular species in the harvests for particular communities and areas is related to the species' geographic distributions. Rural hunters typically hunt within traditional, well-defined territories relatively accessible from their home communities or seasonal hunting camps. Consequently, the species composition of the community's harvest is primarily defined by the location of these traditional community hunting territories in relation to migration routes (flyways), staging areas, and nesting areas of particular species. A species may appear in large numbers in the harvests of one community located near a major migration route, but be relatively absent from the harvests of a neighboring community whose hunting territory is by-passed by the migration. Thus, species composition in a community's subsistence harvest is related to a myriad of micro-environmental factors within the community's hunting territory.

However, considerable variation in species composition data also may be due to the year of the harvest survey. Subsistence hunters are the first to note the extreme year-to-year variability in the character of bird migrations and hunting conditions which affects the composition of the subsistence bag. Some years, particular species appear in abundance while in others, the species may over-fly a community's hunting territory altogether. Some years travel conditions are favorable for hunting, such as firm ice for snowmachine travel along rivers, or open leads for skiff travel along the coast, while they are unfavorable other years. Wind, snow, and precipitation can condition a hunt during the short window of harvest opportunities for rural hunters, each affecting the species composition for a particular year. Bird populations also change over the long term in size and geographic distribution. Some species increase while other decrease. As most subsistence surveys are for a single year, much of the variability between communities may be due to these ecological factors which vary across years. A multi-year data series may result in substantially different findings for particular variables.

This problem of using single-year data points to describe a dynamic subsistence pattern affects a variety of variables in addition to species composition, including measures of harvest levels, seasonality, and hunter effort. The current one-year community surveys provide single snap-shots of a moving, dynamic pattern for particular communities. We know these static, single-year depictions miss much of the true variation in the pattern of bird uses. The Division of Subsistence and other researchers[6] emphasize that these findings are just the beginning of an attempt to describe and understand the dynamics of use of wild resources in rural Alaska.

MIGRATORY BIRD HARVESTS IN ALASKA

The estimated size of the total annual harvest of migratory birds in Alaska during the mid-to-late 1980s is presented in Table 4, divided by rural and non-rural areas. As explained in the methodology, the rural subsistence harvest estimate is expanded from a sample of surveyed communities and standardized to 1985 rural populations (the mid-point of the decade), while the non-rural harvest estimate is expanded from a sample of waterfowl stamp purchasers from non-rural areas representing the 1988-89 harvest year. The estimates are designed to depict the relative size and geographic distribution of Alaska's migratory bird harvests, rather than represent the harvest of a particular year (the later of which is not possible under current harvest monitoring systems). These general comparisons are possible despite the differences between the particular years that the populations were sampled (between-year variability is discussed in a later section).

As shown in Table 4, the estimated total annual harvest of migratory birds in Alaska during the mid-to-late 1980s was about 363,364 birds. Of Alaska's estimated total migratory bird harvest, 84,608 (23.3 percent) were geese, 259,741 (71.5 percent) were ducks, 5,955 (1.6 percent) were cranes, 6,894 (1.9 percent) were swans, and 6,166 (1.7 percent) were "other migratory birds" (primarily shorebirds and seabirds).

These harvest estimates are considerably larger than previous published estimates of migratory bird kills in Alaska based on duck stamp surveys. This is because federal and state duck stamp surveys sample hunters who purchase duck stamps, who are primarily from urban and not rural areas of Alaska. For instance, previously reported average annual duck harvests

6. The harvest information for Barrow and Wainwright was collected as part of on-going harvest studies by the research groups, S.R. Braund and Associates and the Institute of Social and Economic Research (1986, 1989a, 1989b), who request that all findings be considered tentative and subject to modification with additional year's information.

TABLE 4. TOTAL ANNUAL HARVEST OF MIGRATORY BIRDS (NUMBER OF BIRDS) BY RURAL AND URBAN ALASKA AREAS, CIRCA 1980s

AREA	Geese	Ducks	Cranes	Swans	Other	Total
Rural Areas	79655	210448	5283	6894	4962	307242
Urban Areas	4953	49293	672	0	1204	56122
Total	84608	259741	5955	6894	6166	363364

TABLE 5. TOTAL ANNUAL HARVEST OF MIGRATORY BIRDS(NUMBER OF BIRDS) BY URBAN ALASKA AREAS, 1988-89

AREA	Geese	Ducks	Cranes	Swans	Other	Total
Valdez-Whittier	6	48	0	0	0	54
Delta Junction-Ft. Greely	76	704	171	0	10	961
Ketchikan Borough	98	369	22	0	218	707
Juneau Borough	248	3064	35	0	106	3453
Fairbanks North Star Borough	424	5054	94	0	0	5572
Matanuska-Susitna Borough	629	5685	21	0	149	6484
Upper Kenai Peninsula	294	7688	28	0	9	8019
Anchorage Borough	3178	26681	301	0	712	30872
Total	4953	49293	672	0	1204	56122
Percent	8.8	87.8	1.2	0.0	2.1	100.0

FIGURE 3. TOTAL ANNUAL MIGRATORY BIRD HARVEST BY ALASKA RURAL AND URBAN AREAS, MID-TO-LATE 1980s
(NUMBER AND PERCENT OF BIRDS)

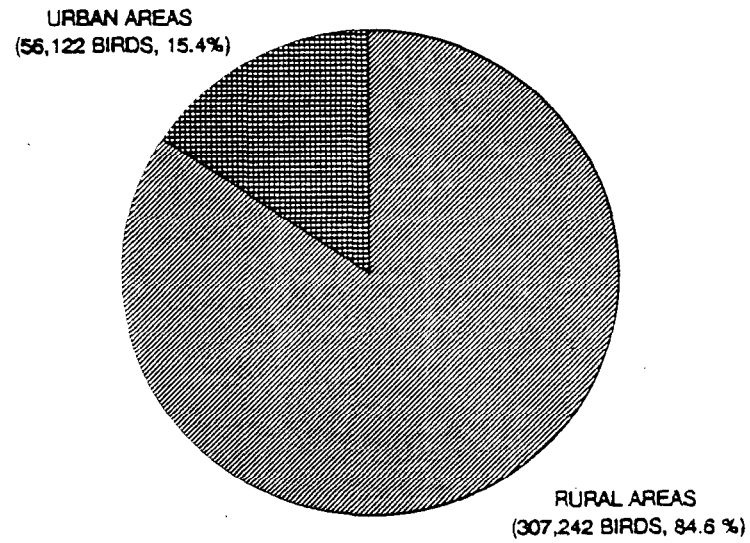
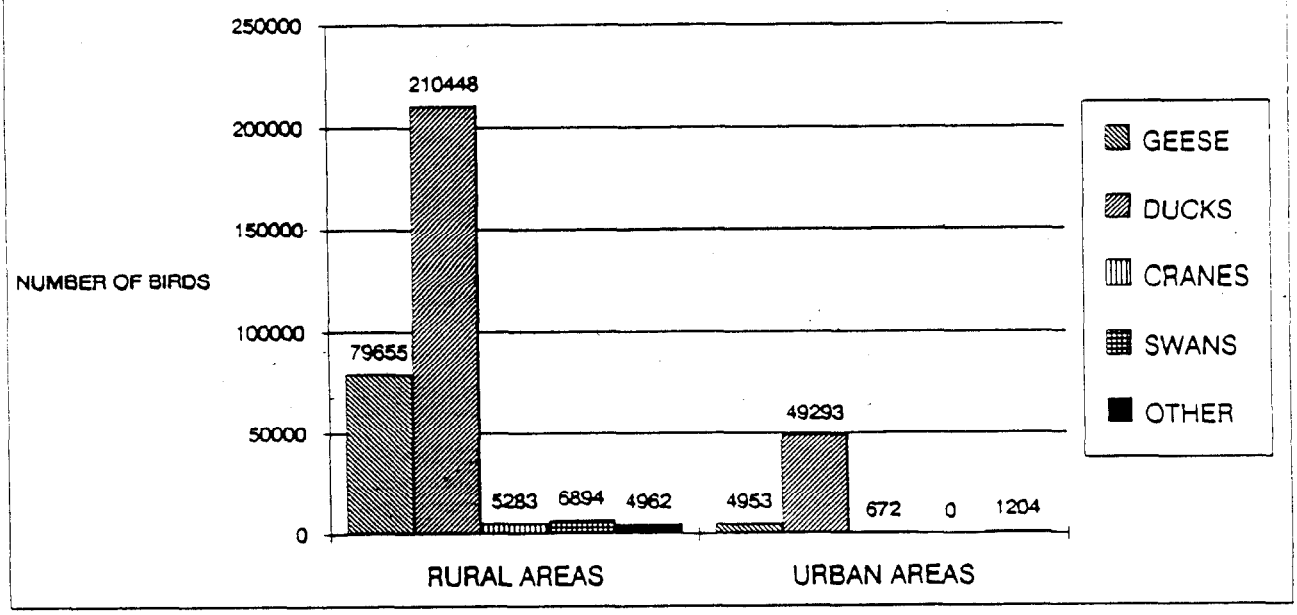


FIGURE 4. ANNUAL MIGRATORY BIRD HARVESTS BY ALASKA RURAL AND URBAN AREAS, MID-TO-LATE 1980s
(NUMBER OF BIRDS)



for Alaska during this period were estimated to be 83,380 ducks from 1981-85 and 81,775 ducks from 1986-89 (with a range of 68,700 to 98,900 ducks), about three times lower than the duck harvest estimates of this report (259,741 ducks) (Gamble 1990). Previously reported average annual geese harvests for Alaska during this period were estimated to be 5,200 geese from both 1981-85 and 1986-90 (with a range of 4,000 to 6,600 geese), about 16 times lower than the geese harvest estimates of this report (84,608 geese) (Bartonek 1991).

In Alaska, the rural subsistence harvest of migratory birds was about five times the size of the non-rural sport harvest: an estimated total of 307,242 migratory birds were harvested by the rural Alaska population compared with an estimated total of 56,122 migratory birds harvested by the non-rural Alaska population. Thus, the rural subsistence bird harvest comprised 84.6 percent of the total Alaska harvest while the non-rural sport harvest was 15.4 percent (Fig. 3). Broken out by categories of migratory birds, the rural subsistence harvest accounted for 94.1 percent of the geese (79,655 birds), 81.0 percent of the ducks (210,448 birds), 88.7 percent of the cranes (5,283 birds), all of the swans (6,894 birds), and 80.5 percent of "other migratory birds" (4,962 birds) (Fig. 4). The non-rural sport harvest accounted for 5.9 percent of the geese (4,953 birds), 19.0 percent of the ducks (49,293 birds), 1.6 percent of the cranes (672 birds), none of the swans, and 19.5 percent of "other migratory birds" (1,204 snipe) (Fig. 4). The rural and non-rural harvests are each discussed in more detail below, including geographical, seasonal, and social characteristics.

The estimated Alaska rural subsistence harvests can be compared with estimated duck and goose harvests in other parts of North America. The reported average annual duck harvest for the period 1981-85 was 14.2 million ducks for the U.S. and Canada, distributed among the following areas: Pacific Flyway (2.7 million ducks), Central Flyway (2.0 million ducks), Mississippi Flyway (5.0 million ducks), Atlantic Flyway (1.7 million ducks), and Canada (2.8 million ducks) (Bartonek 1991). The reported average annual duck harvest for the period 1986-90 was 9.3 million ducks for the U.S. and Canada, distributed among the following areas: Pacific Flyway (1.7 million ducks), Central Flyway (1.2 million ducks), Mississippi Flyway (3.0 million ducks), Atlantic Flyway (1.2 million ducks), and Canada (2.1 million ducks) (Bartonek 1991). By comparison, the estimated annual rural Alaska subsistence duck harvest during the mid-late 1980s (210,448 ducks) was about 1.5 to 2.3 percent of the reported U.S.-Canada duck harvest, and about 7.8 to 12.4 percent of the Pacific Flyway duck harvest.

The reported average annual goose harvest for the period 1981-85 was 1.8 million geese for the United States, distributed among the following areas: Pacific Flyway (290,000 geese), Central Flyway (562,000 geese), Mississippi Flyway (497,000 geese), and Atlantic Flyway (455,000 geese) (Bartonek 1991). The reported average annual goose harvest for the period 1986-90 was 1.6 million geese for the U.S., distributed among the following areas: Pacific Flyway (209,000 geese), Central Flyway (539,000 geese), Mississippi Flyway (553,000 geese), and Atlantic Flyway (366,000 geese) (Bartonek 1991). By comparison, the estimated annual rural Alaska subsistence goose harvest during the mid-late 1980s (79,655 geese) was about 4.4 to 5.0 percent of the reported U.S. goose harvest, and about 27.5 to 38.1 percent of the Pacific Flyway goose harvest.

FIGURE 4B. ESTIMATED MEAN ANNUAL DUCK HARVESTS
BY USER GROUP IN NORTH AMERICA, 1981-90

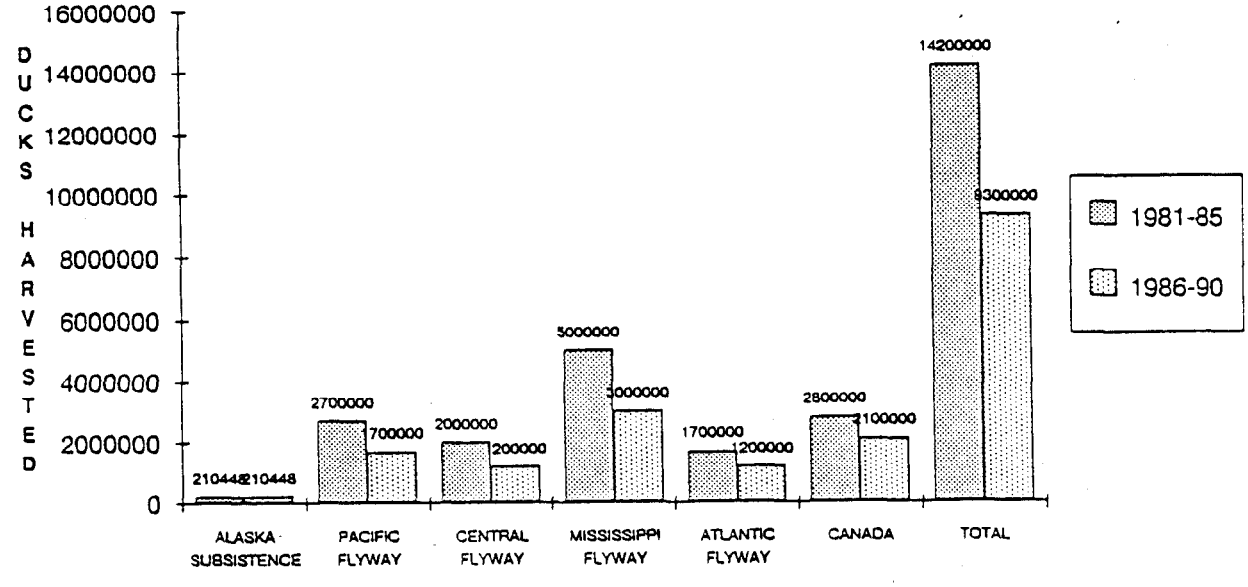
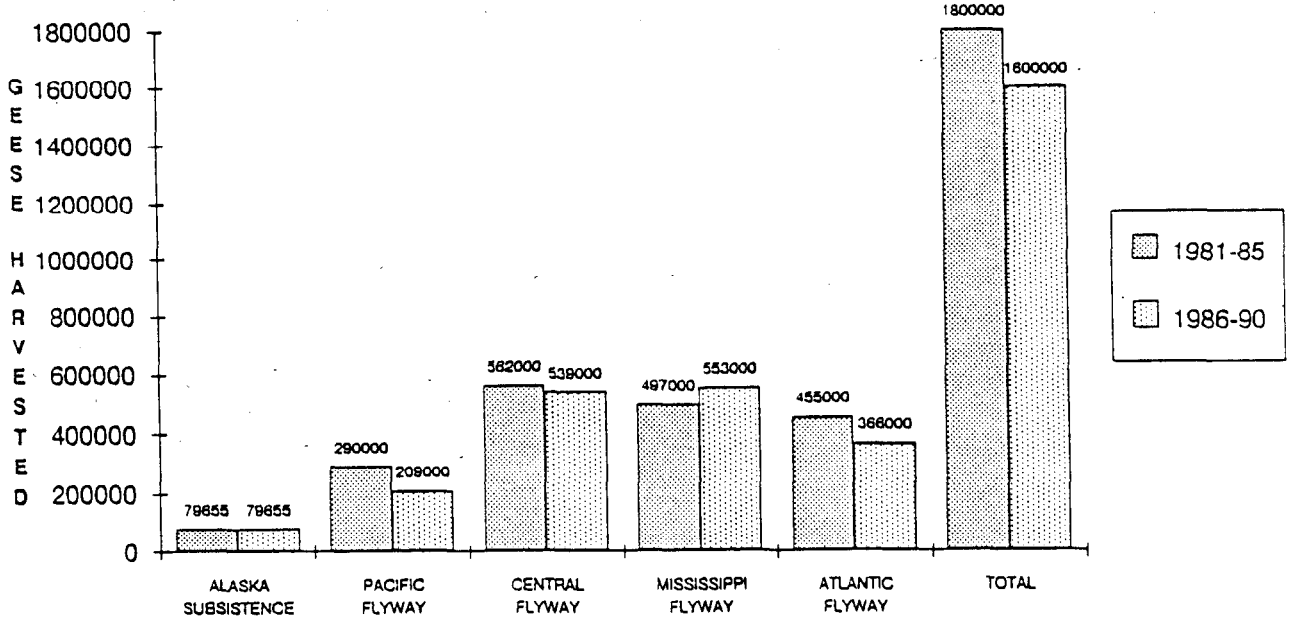


FIGURE 4C. ESTIMATED MEAN ANNUAL GOOSE HARVESTS
BY USER GROUP IN THE UNITED STATES, 1981-90



THE MIGRATORY BIRD HARVEST BY URBAN ALASKA HUNTERS

Total Harvests by Urban Hunters

The estimated size of the migratory bird harvests in 1988-89 by urban Alaska residents is presented in Tables 4-6 and Figs. 5-8. As shown in Table 5 and Fig. 6, an estimated 56,122 migratory birds were harvested by urban Alaska residents in 1988-89. The harvest by urban hunters consisted of 49,293 ducks (87.8 percent), 4,953 geese (8.8 percent), 1,204 "other migratory birds" (snipe) (2.1 percent), and 672 sandhill cranes (1.2 percent). No swans were reported harvested by urban hunters. The harvest survey did not ask about egg harvests; however, very few, if any, migratory bird eggs are believed to be harvested by residents of urban areas.

The migratory bird harvest by urban residents provided about 103,762 lbs (usable weight) of food: 73,940 lbs of duck (71.3 percent), 19,812 lbs of geese (19.1 percent), 9,408 lbs of cranes (9.1 percent), and 602 lbs of snipe (0.6 percent). In terms of per capita measures, the annual estimated harvest of migratory birds in urban Alaska was about .13 birds per urban resident (56,122 birds among 428,970 urban residents). By weight, the urban bird harvest provided about .24 lbs of food per urban Alaska resident. If one assumes there was no sharing of the harvest, then the urban bird harvest represented about 9.4 birds per hunter, or 16.8 lbs per hunter.

The state duck stamp survey asked for species identification only for geese. As shown in Fig. 8, the urban geese harvest (4,953 geese) consisted of 4,113 Canada geese (83.0 percent), 450 white-fronted geese (9.1 percent), 240 brant (4.8 percent), 113 snow geese (2.3 percent), 14 emperor geese (0.3 percent), and 23 "other geese" (0.5 percent).

Harvests by Urban Area

The migratory bird harvest by urban Alaska resident is shown by urban area in Figs. 5-7. Of the urban harvest, the largest numbers of birds were taken by residents of the Anchorage Borough (30,872 birds, or 55.0 percent). The next two largest harvests were taken by residents of the neighboring Matanuska-Susitna Borough (6,484 birds) and Upper Kenai Peninsula (8,019 birds). Thus, about 80.9 percent (45,375 birds) of the total urban harvest were by residents in the vicinity of Anchorage. This is understandable, because this area contained 72.1 percent of Alaska's urban population.

In terms of per capita harvests, the areas were ranked in this order: Delta Junction-Ft. Greely (0.29 birds per capita), Upper Kenai Peninsula (0.21 birds), Matanuska-Susitna Borough (0.21 birds), Anchorage Borough (0.13 birds), Juneau Borough (0.13 birds), Fairbanks North Star Borough (0.07 birds), Ketchikan Borough (0.06 birds), and Valdez-Whittier (0.01 birds). As shown in Fig. 6, duck harvests substantially outnumbered geese harvests in all urban areas. Cranes harvests were relatively important in the interior urban areas of Delta Junction-Ft. Greely (171 cranes) and Fairbanks North Star Borough (94 cranes).

Seasonality of Harvests by Urban Hunters

The seasonal timing of the migratory bird harvests by urban hunters has never been systematically monitored. However, most migratory birds probably are harvested by urban Alaska hunters during legally-regulated sport hunting seasons. This is because of two main

TABLE 6. TOTAL ANNUAL HARVEST OF MIGRATORY BIRDS (NUMBER OF BIRDS) BY URBAN ALASKA AREAS, BY BIRD CATEGORY, 1988-89

AREA	Ducks	Sea Ducks and Mergansers	Canada Geese	Snow Geese	White-fronted Geese	Brant	Emperor Geese	Other Geese	Crane	Snipe	Total
Valdez-Whittier	48	0	6	0	0	0	0	0	0	0	54
Delta Junction-Ft. Greely	694	10	76	0	0	0	0	0	171	10	961
Ketchikan Borough	315	54	76	22	0	0	0	0	22	218	707
Juneau Borough	2674	390	248	0	0	0	0	0	35	106	3453
Fairbanks North Star Boroug	4960	94	245	0	151	19	0	9	94	0	5572
Matanuska-Susitna Borough	5685	0	565	0	21	43	0	0	21	149	6484
Upper Kenai Peninsula	6573	1115	267	9	18	0	0	0	28	9	8019
Anchorage Borough	25298	1383	2630	82	260	178	14	14	301	712	30872
TOTAL	46247	3046	4113	113	450	240	14	23	672	1204	56122

FIGURE 5. TOTAL ANNUAL MIGRATORY BIRD HARVESTS BY URBAN AREA, 1988-89 (NUMBER OF BIRDS)

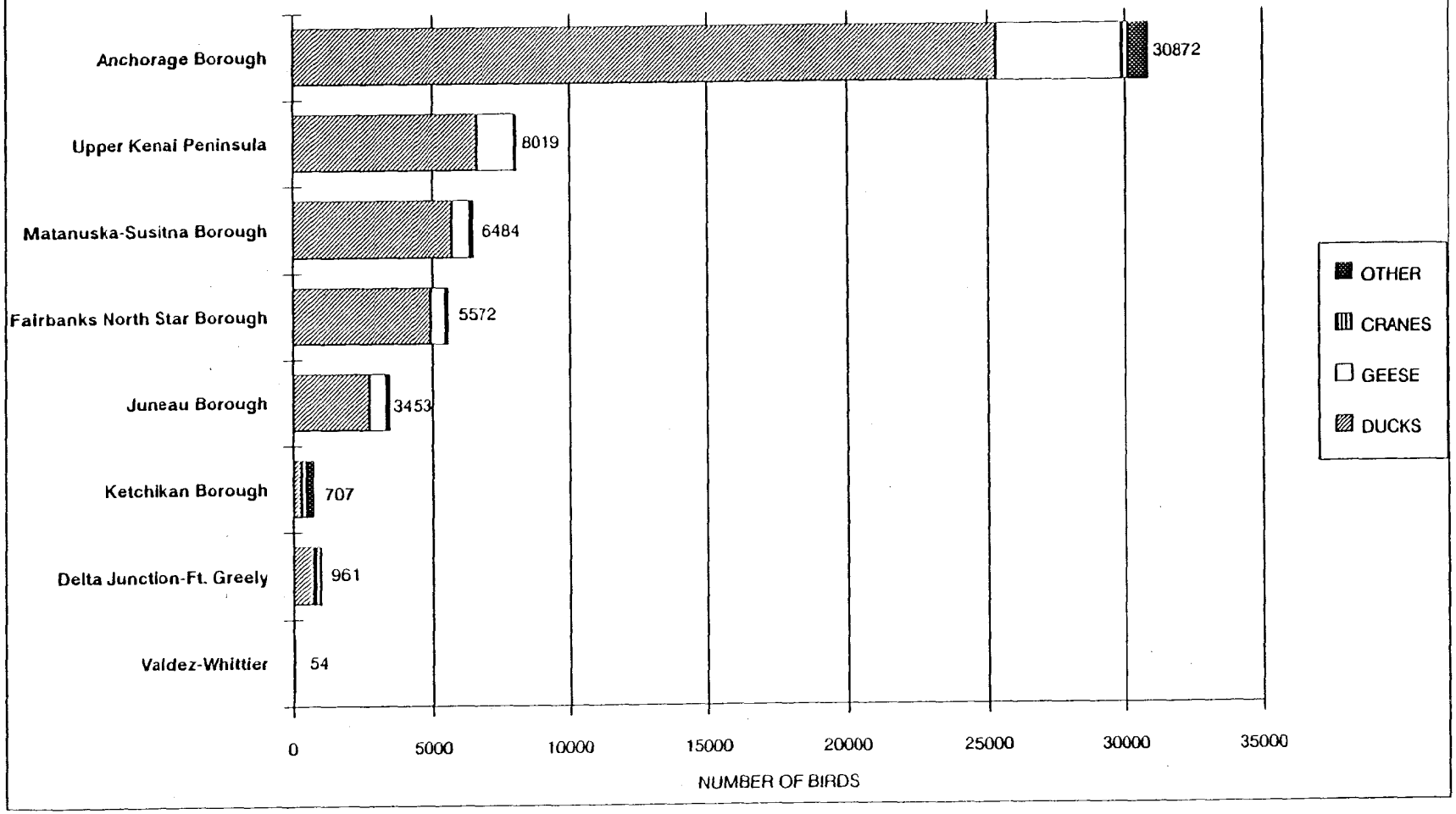


FIGURE 6. TOTAL ANNUAL GEESE AND DUCK HARVESTS BY URBAN AREA, 1988-89 (NUMBER OF BIRDS)

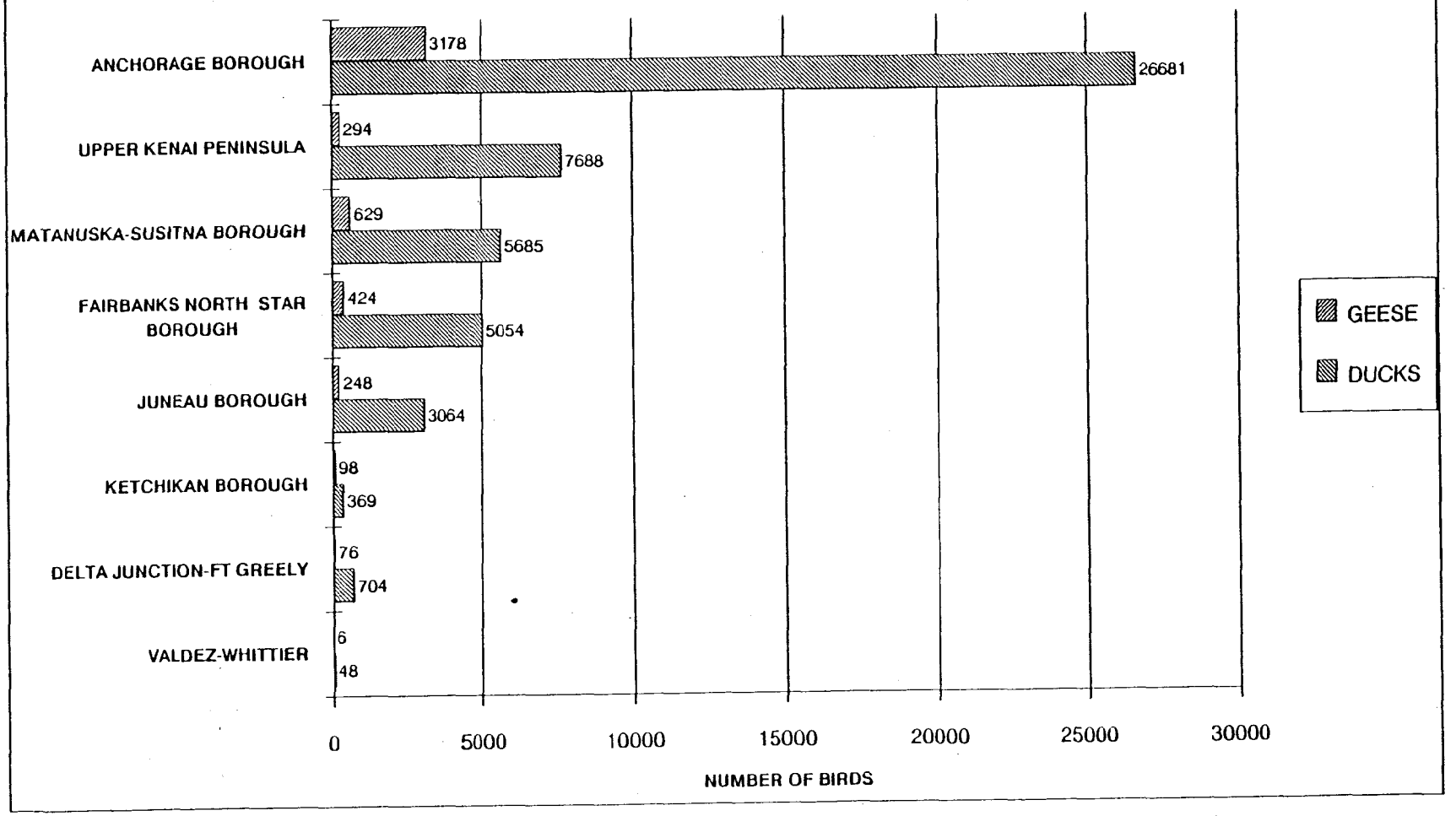


FIGURE 7. TOTAL ANNUAL CRANE AND "OTHER MIGRATORY BIRD" HARVESTS BY URBAN AREA, 1988-89
(NUMBER OF BIRDS)

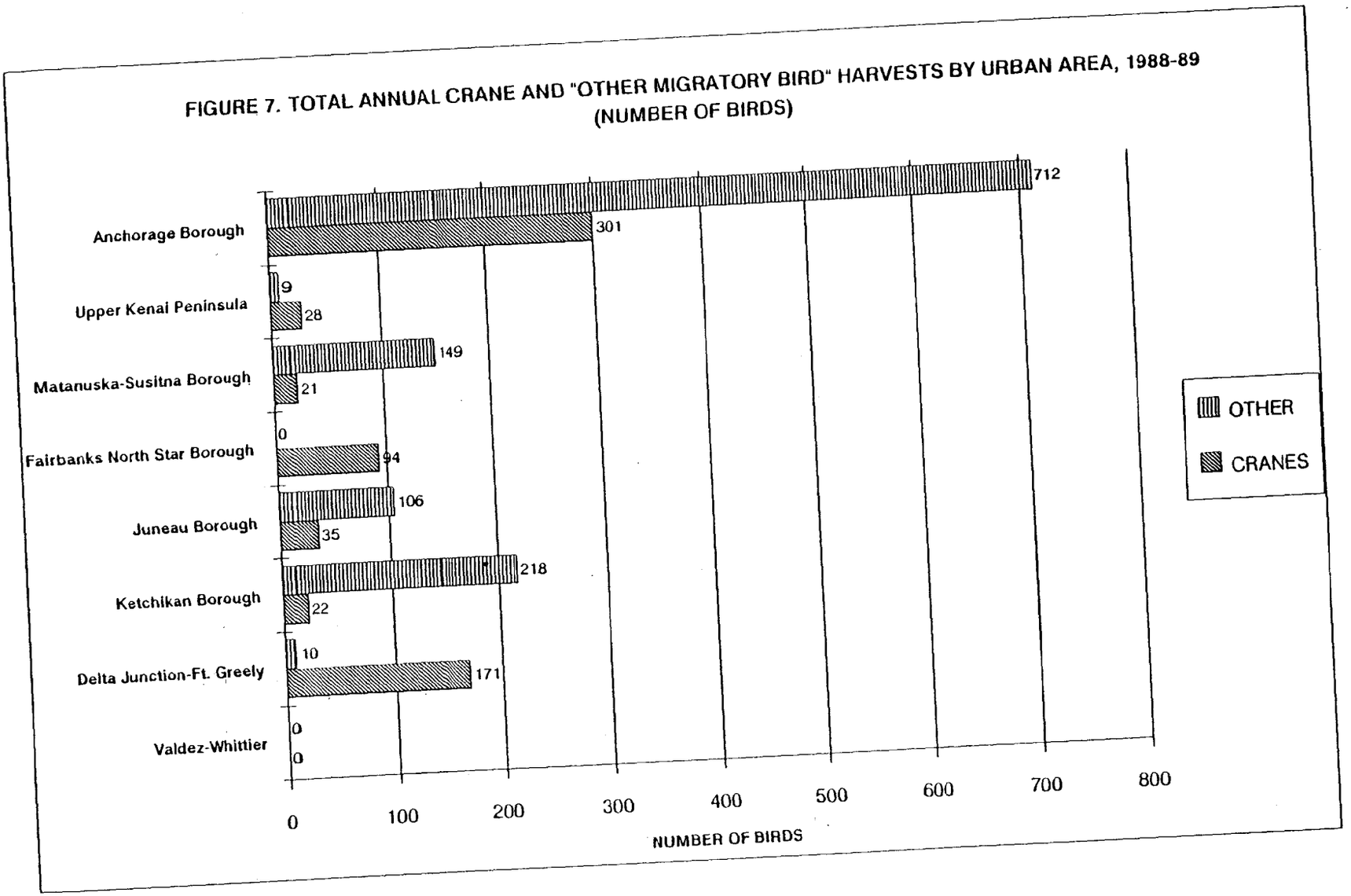
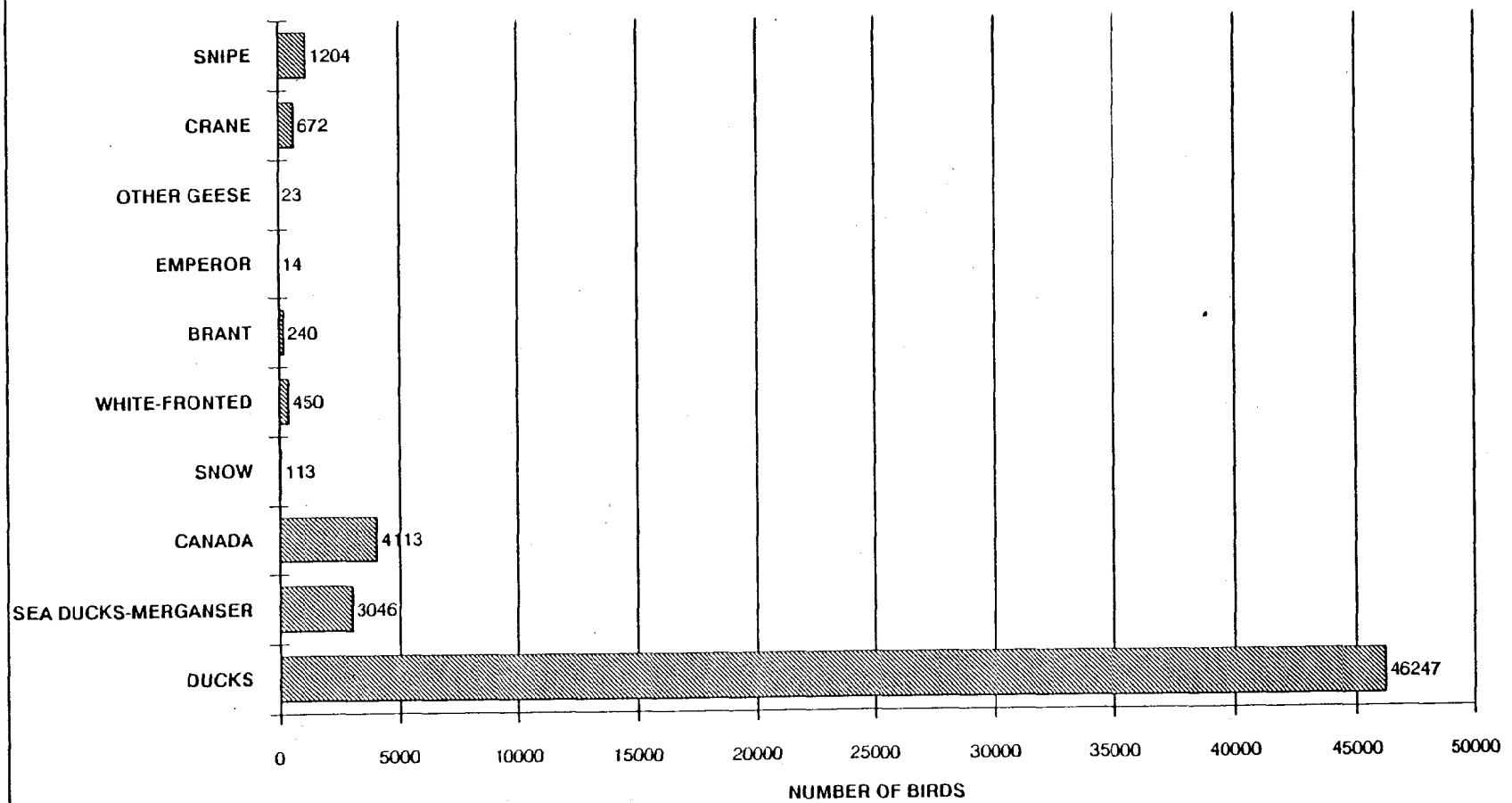


FIGURE 8. COMPOSITION OF TOTAL ANNUAL MIGRATORY BIRD HARVESTS BY URBAN AREAS, 1988-89
(NUMBER OF BIRDS)



factors. First, most hunters in urban Alaska areas are socialized within Euro-American hunting traditions. According to these traditions, bird hunting represents a form of recreation. Bird hunting is planned as periodic breaks ("off-hours", "weekends", "time off", "vacations") from normal work schedules. Bird hunting is conceptually separated from work activities in the economic sphere. The legally-regulated sport hunting seasons during fall and winter are developed by the federal and state government agencies within this same cultural framework to accommodate bird hunting as a recreational pursuit. Schooled in this cultural tradition, most urban hunters concur with regulated fall seasons and willingly choose to hunt within them. Most urban Alaska hunters do not hunt migratory birds during spring and summer seasons, even though birds are available. The rationale for abstaining from hunting includes the closed regulatory seasons and the belief that spring hunting may damage bird populations by removing adults ready to nest and rear the next generation of birds. Legal hunting seasons also are enforced near Alaska's urban areas. Hunting within areas near urban populations are visible to a relatively large public. Consequently, wildlife enforcement acts to constrain urban residents to hunt within legal sport seasons.

THE MIGRATORY BIRD HARVEST BY RURAL SUBSISTENCE HUNTERS

Total Subsistence Harvests

The estimated size of the annual subsistence harvest of migratory birds in Alaska during the mid-to-late 1980s (standardized to 1985, the mid-point of the decade) is presented in Tables 7-11 and Figs. 9-18. The tables present the annual subsistence harvest in terms of total numbers of birds (Table 7), total pounds of birds (usable weights) (Table 9), numbers of birds per capita (Table 10), and pounds of birds per capita (usable weight) (Table 11). The annual harvest of migratory bird eggs is presented also (Tables 8, 10, and 11).

As shown in Table 7, an estimated 307,242 birds were harvested for subsistence use in rural Alaska communities annually during the mid-to-late 1980s. Of the Alaska subsistence harvest, 79,655 (25.9 percent) were geese, 210,448 (68.5 percent) were ducks, 5,283 (1.7 percent) were cranes, 6,894 (2.2 percent) were swans, and 4,962 (1.6 percent) were "other" migratory birds (primarily seabirds, such as murres, gulls, cormorants, and puffins) (Fig. 9). The annual estimated subsistence harvest of migratory bird eggs in Alaska was 83,603 eggs, of which the majority were gull eggs (68.6 percent) or "other sea bird" eggs (15.8 percent) (Table 8, Fig. 11).

Converted to usable weights, the subsistence harvest of migratory birds provided about 761,941 lbs of food annually to rural Alaska during the mid-to-late 1980s (Table 9). Of the food harvest, 325,982 lbs (42.8 percent) were geese, 301,549 lbs (39.6 percent) were ducks, 45,214 lbs (5.9 percent) were cranes, 76,080 lbs (10.0 percent) were swans, and 13,116 lbs (1.7 percent) were "other" migratory birds (Fig. 10). Eggs of migratory birds provided an additional 12,719 lbs of food. As these comparisons indicate, while the number of harvested ducks outnumbered geese by about 2.5 to 1, geese provided somewhat more food by weight than ducks because of their larger sizes.

In terms of per capita measures, the annual estimated subsistence harvest of migratory birds in Alaska was 2.8 birds per rural resident (.72 geese, 1.91 ducks, .05 cranes, .06 swans, and .05 other birds) (Table 10). By weight, the subsistence waterfowl harvest provided about 6.9 lbs of food per rural resident (Table 11). The annual estimated per capita subsistence harvest of migratory bird eggs was .76 eggs per rural resident, or about .12 lbs of food per person (Tables 10-11).

FIGURE 9. COMPOSITION OF TOTAL ANNUAL SUBSISTENCE MIGRATORY BIRD HARVESTS, MID-TO-LATE 1980s (NUMBER OF BIRDS)

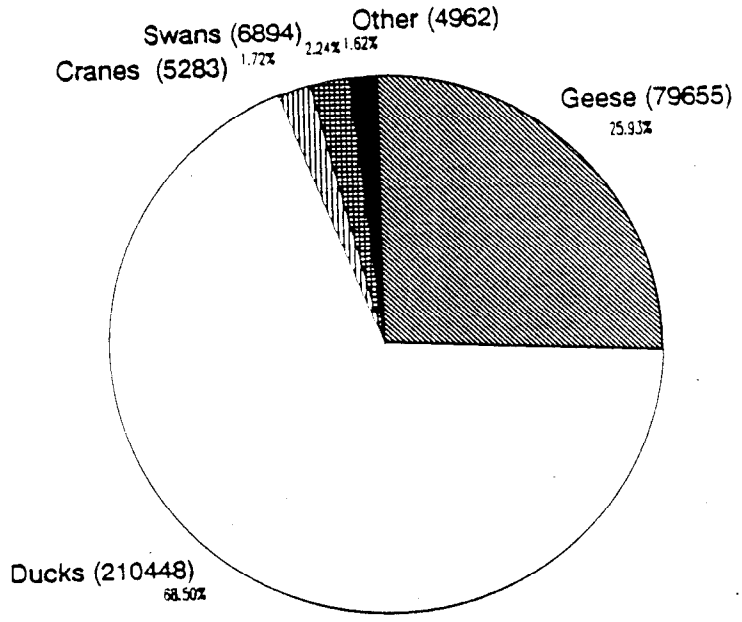


FIGURE 10. COMPOSITION OF TOTAL ANNUAL SUBSISTENCE MIGRATORY BIRD HARVESTS, MID-TO-LATE 1980s (LBS OF BIRDS)

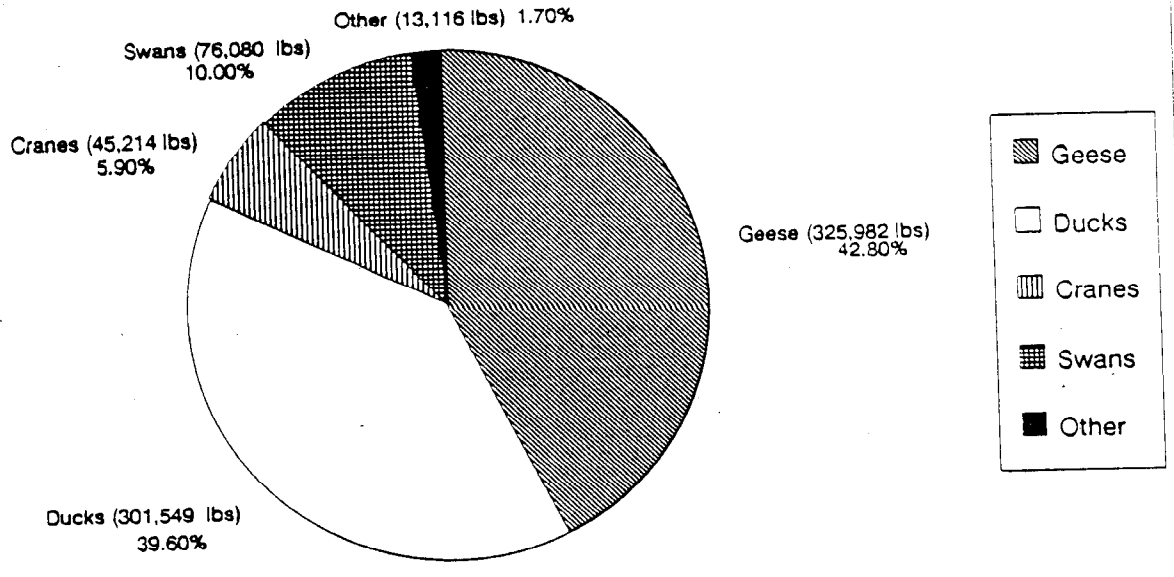


FIGURE 11. COMPOSITION OF SUBSISTENCE MIGRATORY BIRD EGG HARVESTS, MID-TO-LATE 1980s, FOR REPORTING RURAL AREAS (NUMBER OF EGGS)

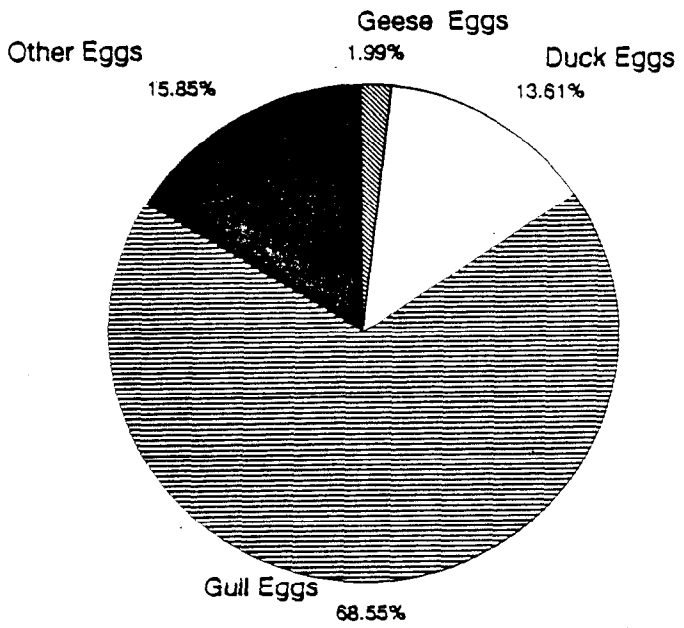


TABLE 7. TOTAL HARVESTS OF MIGRATORY BIRDS BY RURAL AREA, 1985
(NUMBER OF BIRDS)

RURAL AREAS	Geese	Ducks	Cranes	Swans	Other	Total
Upper Cook Inlet	28	394	0	0	0	422
Parks Highway	35	615	4	0	0	654
Lower Kenai Peninsula	9	1179	0	0	210	1398
Copper River Basin	121	1481	95	2	0	1699
Prince William Sound	257	2754	13	0	0	3024
Upper Tanana	191	4462	17	0	0	4670
Upper Kuskokwim	1204	5179	121	0	0	6504
Bristol Bay-Illiamna Lake	1920	8842	170	98	0	11030
Kodiak Island	829	11427	0	0	0	12256
Northwest Arctic	3584	9471	33	0	89	13178
Alaska Peninsula	2920	12852	221	70	472	16535
Arctic Slope	9005	7590	0	0	4	16598
Southeast Archipelago	3717	20393	0	0	1846	25956
Seward Peninsula-Norton Sound	17913	20675	2253	381	3	41225
Upper Yukon-Koyukuk-Lower Tanana	18361	42162	292	58	0	60873
Yukon-Kuskokwim Delta	19561	60972	2064	6285	2338	91220
Total Harvest	79655	210448	5283	6894	4962	307242
Percent	25.9	68.5	1.7	2.2	1.6	100.0

TABLE 8. TOTAL EGG HARVESTS BY RURAL AREA, 1985
(NUMBER OF EGGS)

RURAL AREA	Geese	Ducks	Gull	Other	Total
Upper Yukon-Koyukuk-Lower Tanana	0	0	0	0	0
Upper Cook Inlet	0	0	0	0	0
Upper Kuskokwim	0	0	0	0	0
Copper River Basin	0	0	0	0	0
Parks Highway	0	0	0	0	0
Upper Tanana	0	0	0	53	53
Lower Kenai Peninsula	0	0	333	41	374
Prince William Sound	*	*	*	*	1877
Southeast Archipelago	0	0	0	2819	2819
Yukon-Kuskokwim Delta	541	1349	506	1427	3823
Kodiak Island	*	*	*	*	5665
Bristol Bay-Illamna Lake	279	864	7867	323	9333
Northwest Arctic	*	*	*	*	13428
Seward Peninsula-Norton Sound	137	3733	8209	1885	13964
Arctic Slope	*	*	*	*	14227
Alaska Peninsula	8	641	16269	1122	18040
Total Harvest					83603
Percent	2.0	13.6	68.6	15.8	100.0

*Egg type not reported

TABLE 9. TOTAL POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL AREA, 1985

RURAL AREA	Geese	Ducks	Cranes	Swans	Other	Total Birds	Eggs	Birds and Eggs	Birds Percent
Upper Cook Inlet	101	675	0	0	0	776	0	776	.1
Parks Highway	104	921	26	0	0	1051	0	1051	.1
Lower Kenai Peninsula	44	1302	0	0	295	1641	55	1696	.2
Copper River Basin	211	1047	575	13	0	1846	0	1846	.2
Upper Tanana	280	3289	103	0	0	3672	8	3680	.5
Prince William Sound	1268	3978	130	0	0	5376	144	5520	.7
Upper Kuskokwim	4819	7764	1211	0	0	13794	0	13794	1.8
Bristol Bay-Iliamna Lake	5734	11328	1015	1000	0	19077	1457	20534	2.5
Kodiak Island	3369	17500	0	0	0	20869	784	21653	2.7
Alaska Peninsula	6500	14206	1356	378	108	22548	2571	25119	3.0
Northwest Arctic	14506	13999	273	0	175	28953	2584	31537	3.8
Southeast Archipelago	15011	31252	0	0	2806	49069	564	49633	6.4
Arctic Slope	40083	11722	0	0	6	51811	2144	53955	6.8
Seward Peninsula-Norton Sound	66281	31083	20070	3592	0	121026	1717	122743	15.9
Upper Yukon-Koyukuk-Lower Tanana	86745	51817	1865	647	0	141074	0	141074	18.5
Yukon-Kuskokwim Delta	80926	99666	18590	70450	9726	279358	691	280049	36.7
Total Harvest	325982	301549	45214	76080	13116	761941	12719	774660	100
Percent	42.8	39.6	5.9	10.0	1.7	100			

Subsistence Harvests by Geographic Area

Subsistence waterfowl harvests varied considerably by geographic area. As shown in Table 7 and Fig. 12, about 62.9 percent of Alaska's subsistence waterfowl harvest was taken in three areas: the Yup'ik Eskimo communities of the Yukon-Kuskokwim Delta harvested 91,220 birds (29.7 percent of the state total); the primarily Athabaskan Indian communities of the Yukon, Koyukuk, and lower Tanana rivers harvested 60,873 birds (19.8 percent); and the Inupiat-Yup'ik Eskimo communities of the Seward Peninsula-Norton Sound area harvested 41,225 birds (13.4 percent). The rural communities of the Southeast Archipelago, containing mixed Euro-American and Tlingit Indian groups, harvested a substantial number of waterfowl (25,956 birds, or 8.5 percent of the state total), most of which were ducks taken during fall and winter. Geographic areas harvesting between 10,000-20,000 birds included the Arctic Slope, Alaska Peninsula, Northwest Arctic, Kodiak Island, and Bristol Bay-Iliamna Lake areas.

Duck harvests substantially out-numbered geese harvests in all rural areas except the Arctic Slope and the Seward Peninsula-Norton Sound area (Fig. 13). Cranes were harvested primarily in two areas: the Seward Peninsula-Norton Sound area (2,253 cranes) and the Yukon-Kuskokwim Delta (2,064 cranes), representing 81.7 percent of the state's subsistence crane harvest (Fig. 14). Most (90.9 percent) of the subsistence swan harvest was taken by Yukon-Kuskokwim Delta communities, although swans were reported taken in five other areas as well (Fig. 14). The species of birds harvested are discussed in later sections.

As shown by Tables 10-11 and Figs. 17-18, the three most productive geographic areas also displayed the largest per capita bird harvests: the primarily Athabaskan Indian communities of the Yukon, Koyukuk, and lower Tanana rivers harvested 19.1 lbs per person (or 8.2 birds per person); the Inupiat-Yup'ik Eskimo communities of the Seward Peninsula-Norton Sound area harvested 18.1 lbs of birds per person (or 6.2 birds per person); and the Yup'ik Eskimo communities of the Yukon-Kuskokwim Delta harvested 16.1 lbs per person (or 5.3 birds per person). Notably, the mean per capita harvest weights (between 16-19 lbs) are similar across these diverse geographic and cultural areas. The significance of subsistence hunting of migratory birds in the Yukon-Kuskokwim Delta area is well-known (Klein 1966). That there are at least two other Alaska regions harvesting at comparable levels had not been previously documented. Areas harvesting at levels greater than 5 lbs per person include the Arctic Slope (9.4 lbs), the Upper Kuskokwim River (9.1 lbs), the Alaska Peninsula (6.4 lbs), and the Northwest Arctic Coast (5.0 lbs) (Fig. 18).. By comparison, the Southeast Archipelago displays relatively low per capita harvests (1.9 lbs per person, or about one bird per person); its large total waterfowl harvest reflects the greater number of people living in the southeast region.

The largest subsistence migratory bird egg harvests occurred in communities of the Alaska Peninsula (18,040 eggs, or 5.1 eggs per capita) (Fig. 15, Tables 8 and 11). Egg harvests near or greater than 10,000 eggs occurred in the Arctic Slope (14,227 eggs), Seward Peninsula-Norton Sound (13,964 eggs), Northwest Arctic (13,428 eggs), and the Bristol Bay region (9,333 eggs). For areas where type of eggs was reported, the great majority of the subsistence egg harvest (84.4 percent) were gull or other sea bird eggs; 13.6 percent were duck eggs; and 2.0 percent were geese eggs (Fig. 11).

The largest bird harvests occurred in areas with predominantly Alaska Native populations, which is illustrated in Figure 19. There is a strong positive statistical relationship between an area's mean per capita harvest of migratory birds and the percent of Alaska Natives in the area's population. This means that statistically, bird harvests increase as the percent of Alaska Natives increase in an area's population (regression coefficient $r = 0.685$; $r^2 = .47$; X coefficient = 0.159 with a standard error of coefficient = 0.045). The strong positive correlation between bird harvest levels and the cultural composition of the population is

TABLE 10. PER CAPITA HARVESTS OF MIGRATORY BIRDS BY RURAL AREA (NUMBER OF BIRDS)

RURAL AREA	Geese	Ducks	Cranes	Swans	Other	Total Birds	Eggs
Copper River Basin	0.03	0.43	0.03	0.00	0.00	0.49	0.00
Parks Highway	0.03	0.48	<0.00	0.00	0.00	0.51	0.00
Kodiak Island	0.06	0.87	0.00	0.00	0.00	0.93	0.44
Upper Cook Inlet	0.06	0.91	0.00	0.00	0.00	0.97	0.00
Southeast Archipelago	0.14	0.78	0.00	0.00	0.07	0.99	0.11
Prince William Sound	0.10	1.10	0.01	0.00	0.00	1.21	0.75
Lower Kenai Peninsula	0.01	1.51	0.00	0.00	0.27	1.78	0.48
Bristol Bay-Iliamna Lake	0.39	1.78	0.03	0.02	0.00	2.21	1.87
Northwest Arctic	0.62	1.64	0.01	0.00	0.02	2.28	2.32
Arctic Slope	1.63	1.38	0.00	0.00	0.00	3.01	2.58
Upper Tanana	0.15	3.44	0.01	0.00	0.00	3.60	0.04
Upper Kuskokwim	0.79	3.42	0.08	0.00	0.00	4.30	0.00
Alaska Peninsula	0.82	3.62	0.06	0.02	0.13	4.66	5.08
Yukon-Kuskokwim Delta	1.13	3.52	0.12	0.36	0.13	5.27	0.22
Seward Peninsula-Norton Sound	2.68	3.10	0.34	0.05	0.00	6.17	2.09
Upper Yukon-Koyukuk-Lower Tanana	2.49	5.71	0.04	0.01	0.00	8.24	0.00

TABLE 11. PER CAPITA HARVESTS OF MIGRATORY BIRDS BY RURAL AREA (LBS OF BIRDS)

RURAL AREA	Geese	Ducks	Cranes	Swans	Other	Total Birds	Eggs	Birds & Eggs
Copper River Basin	0.06	0.30	0.17	0.00	0.00	0.53	0.00	0.53
Parks Highway	0.08	0.72	0.02	0.00	0.00	0.82	0.00	0.82
Kodiak Island	0.26	1.35	0.00	0.00	0.00	1.61	0.06	1.67
Upper Cook Inlet	0.23	1.55	0.00	0.00	0.00	1.79	0.00	1.79
Southeast Archipelago	0.57	1.19	0.00	0.00	0.11	1.87	0.02	1.89
Lower Kenai Peninsula	0.06	1.66	0.00	0.00	0.38	2.10	0.07	2.17
Prince William Sound	0.51	1.59	0.05	0.00	0.00	2.15	0.06	2.21
Upper Tanana	0.22	2.54	0.08	0.00	0.00	2.83	0.01	2.84
Bristol Bay-Iliamna Lake	1.15	2.27	0.20	0.20	0.00	3.83	0.29	4.12
Northwest Arctic	2.51	2.42	0.05	0.00	0.03	5.00	0.45	5.45
Alaska Peninsula	1.83	4.00	0.38	0.11	0.03	6.35	0.72	7.08
Upper Kuskokwim	3.18	5.13	0.80	0.00	0.00	9.11	0.00	9.11
Arctic Slope	7.27	2.13	0.00	0.00	0.00	9.40	0.39	9.79
Yukon-Kuskokwim Delta	4.67	5.75	1.07	4.07	0.56	16.12	0.04	16.16
Seward-Norton Sound	9.93	4.66	3.01	0.54	0.00	18.13	0.26	18.39
Upper Yukon-Koyukuk-Lower Tanana	11.74	7.01	0.25	0.09	0.00	19.09	0.00	19.09

FIGURE 12. TOTAL ANNUAL SUBSISTENCE MIGRATORY BIRD HARVESTS BY RURAL AREA, MID-TO-LATE 1980s (NUMBER OF BIRDS)

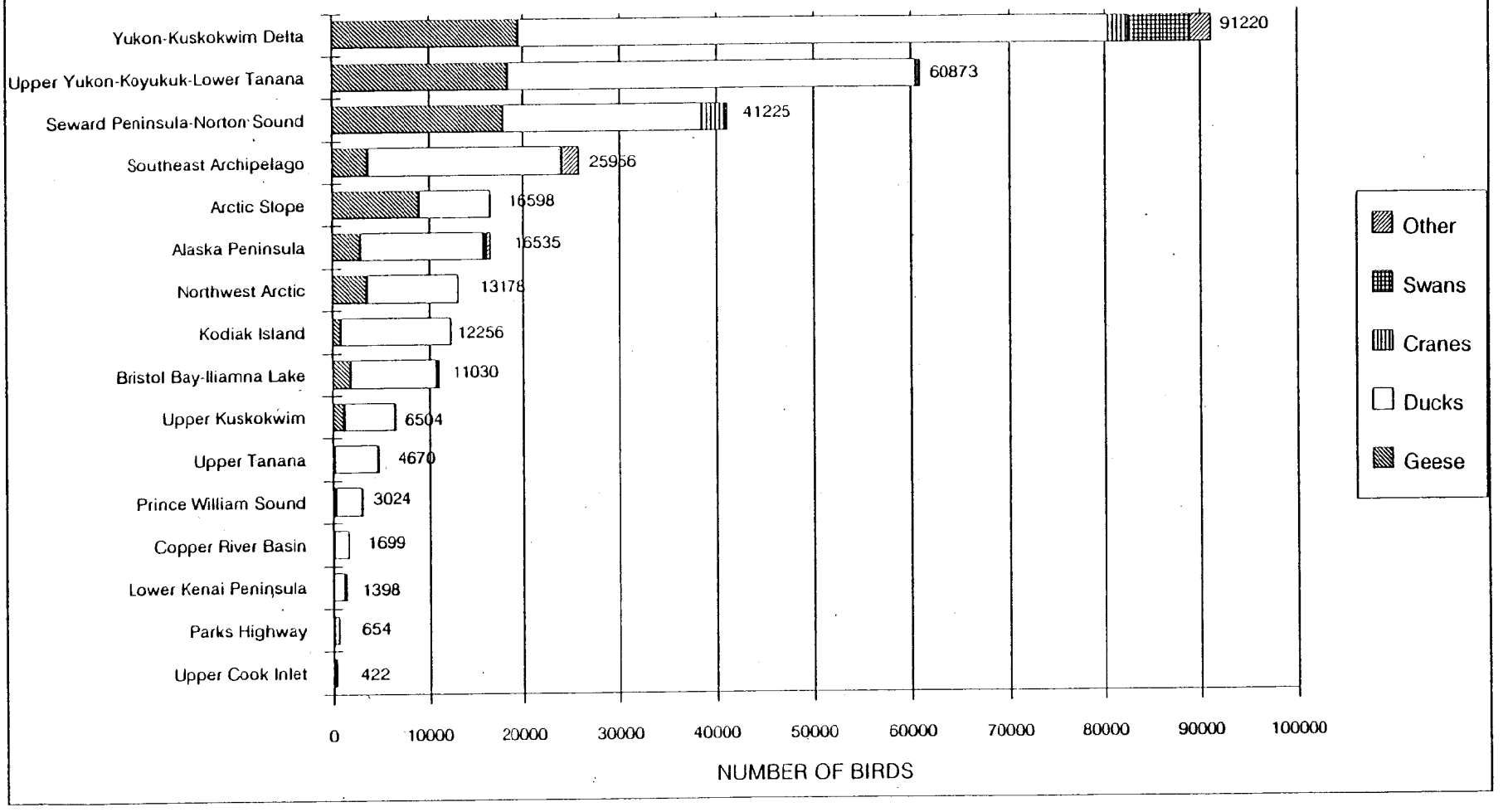


FIGURE 13. TOTAL ANNUAL SUBSISTENCE GEESE AND DUCK HARVESTS BY RURAL AREA, MID-TO-LATE 1980s (NUMBER OF BIRDS)

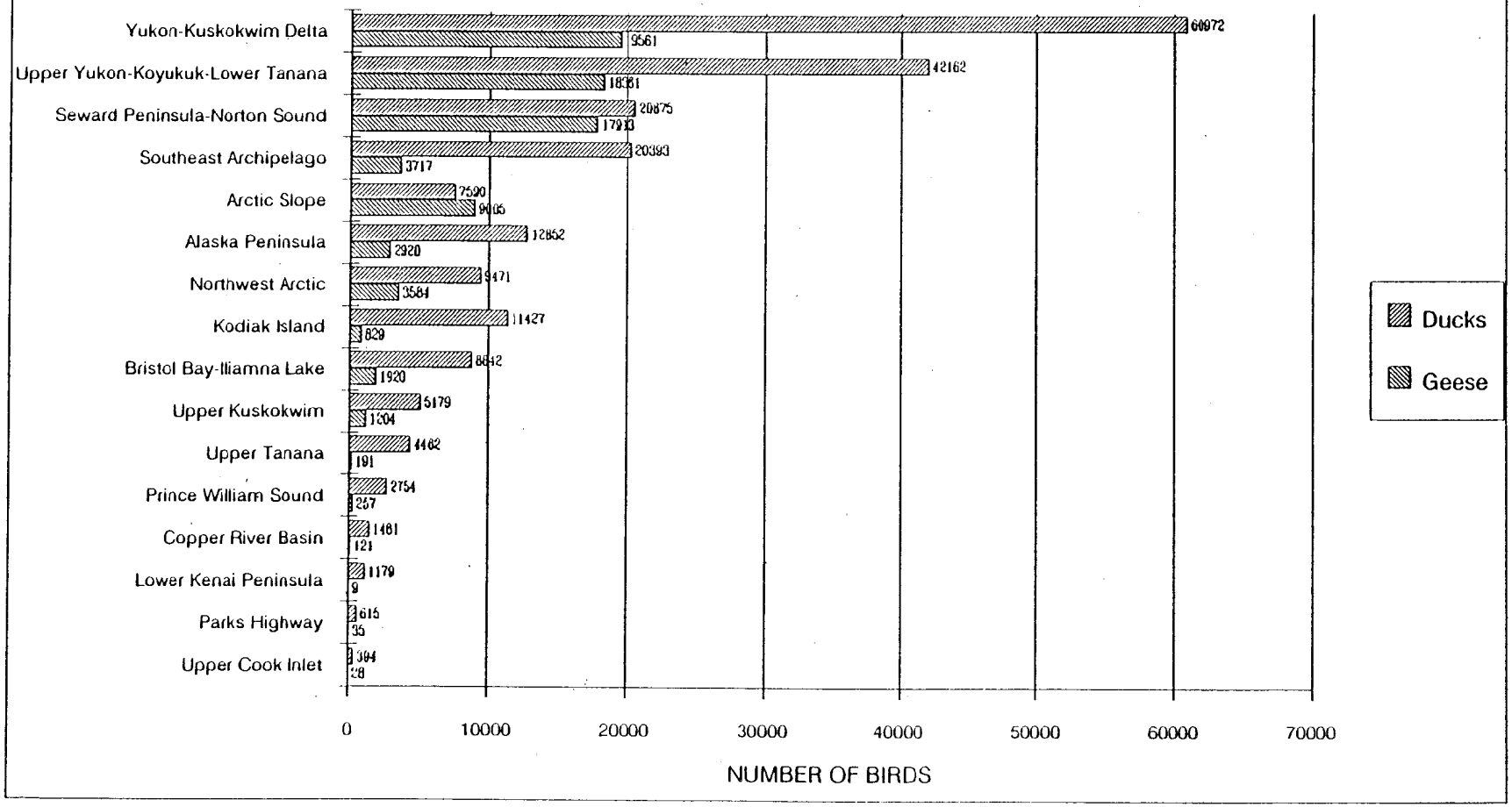


FIGURE 14. TOTAL ANNUAL SUBSISTENCE CRANE, SWAN, AND "OTHER MIGRATORY BIRD" HARVESTS BY RURAL AREA, MID-TO-LATE 1980s (NUMBER OF BIRDS)

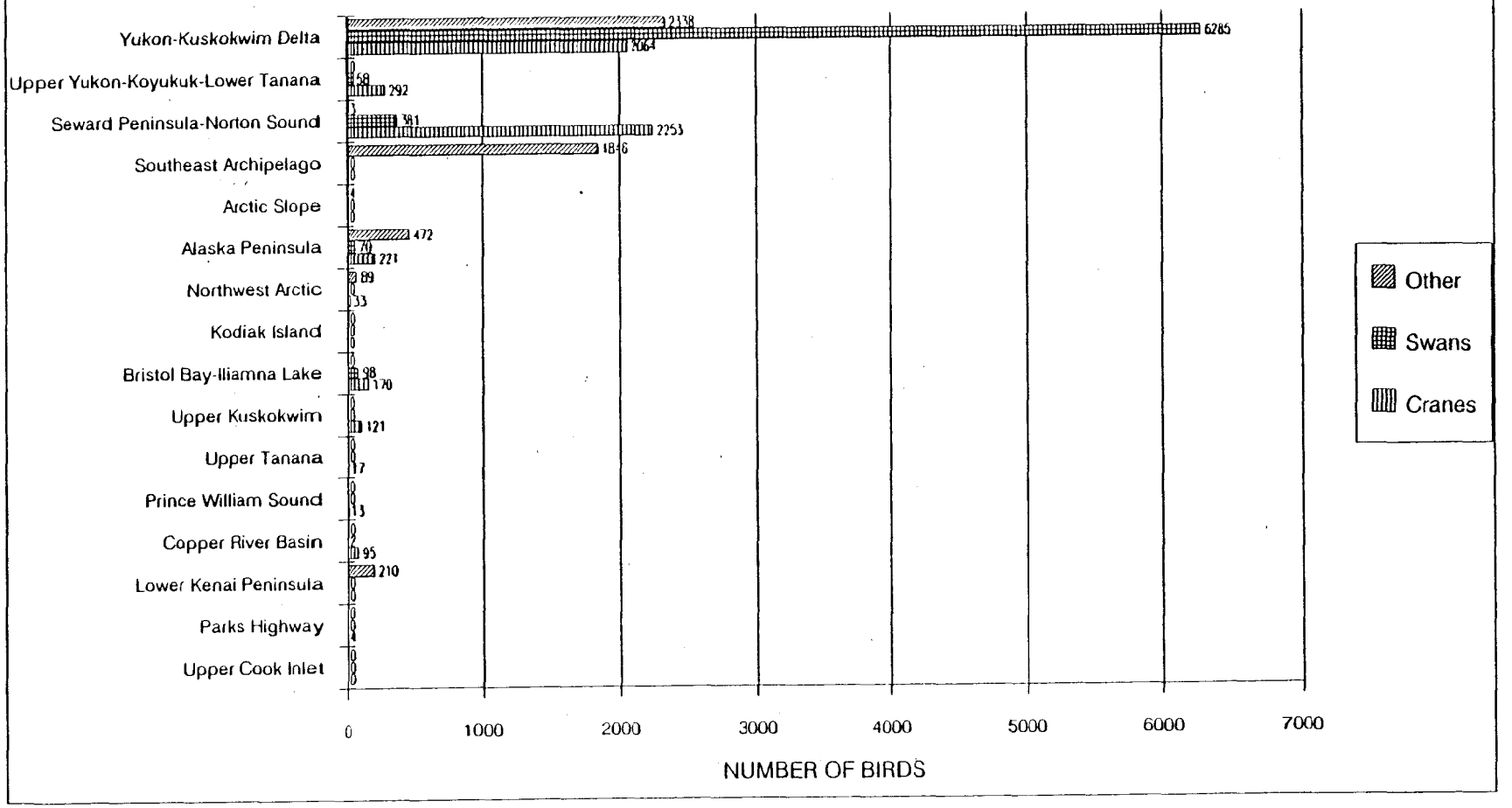


FIGURE 15. TOTAL ANNUAL SUBSISTENCE MIGRATORY BIRD EGG HARVESTS BY RURAL AREA, MID-TO-LATE 1980s (NUMBER OF EGGS)

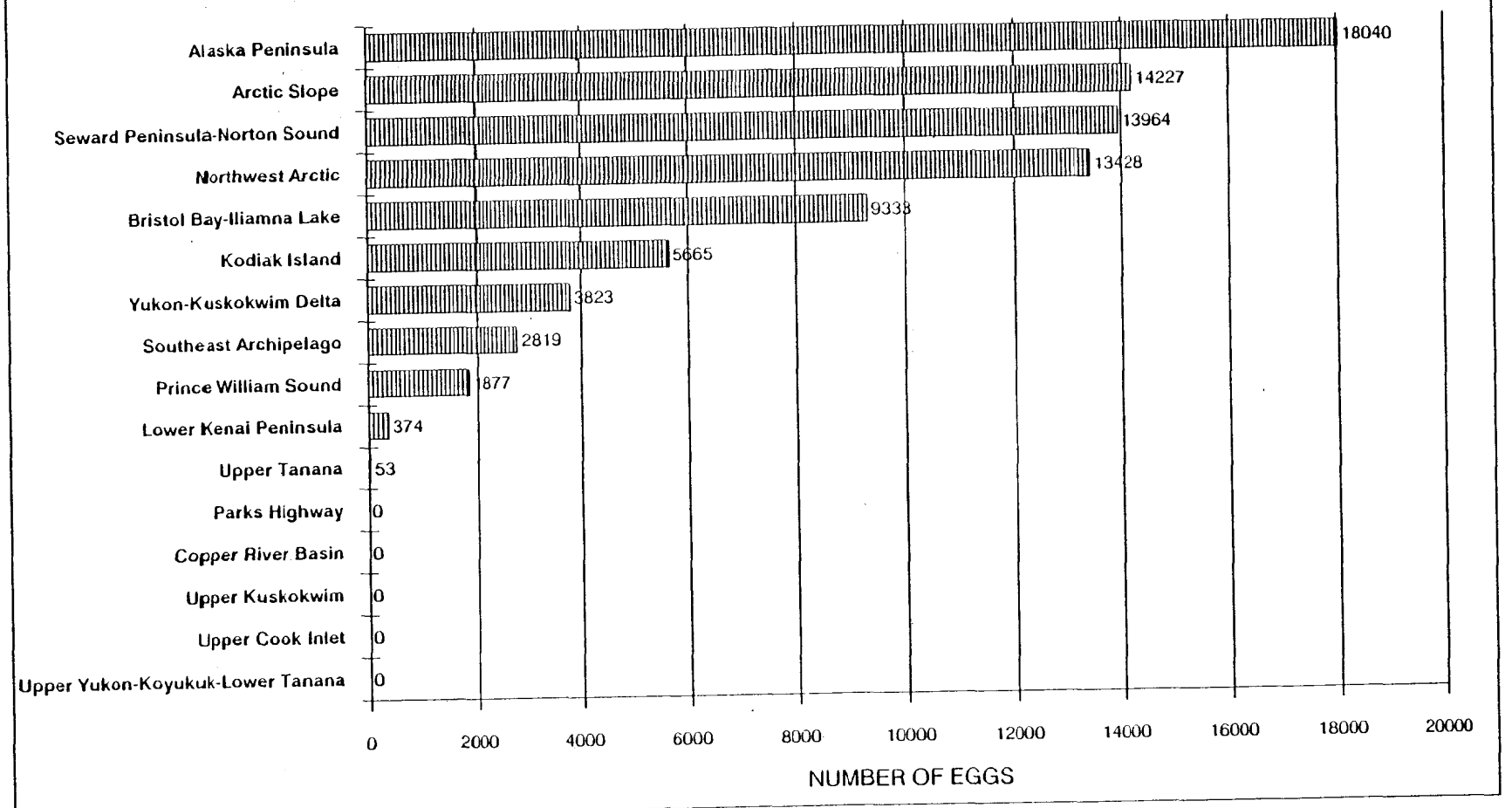


FIGURE 16. TOTAL ANNUAL SUBSISTENCE MIGRATORY BIRD HARVESTS BY RURAL AREA, MID-TO-LATE 1980s (LBS OF BIRDS)

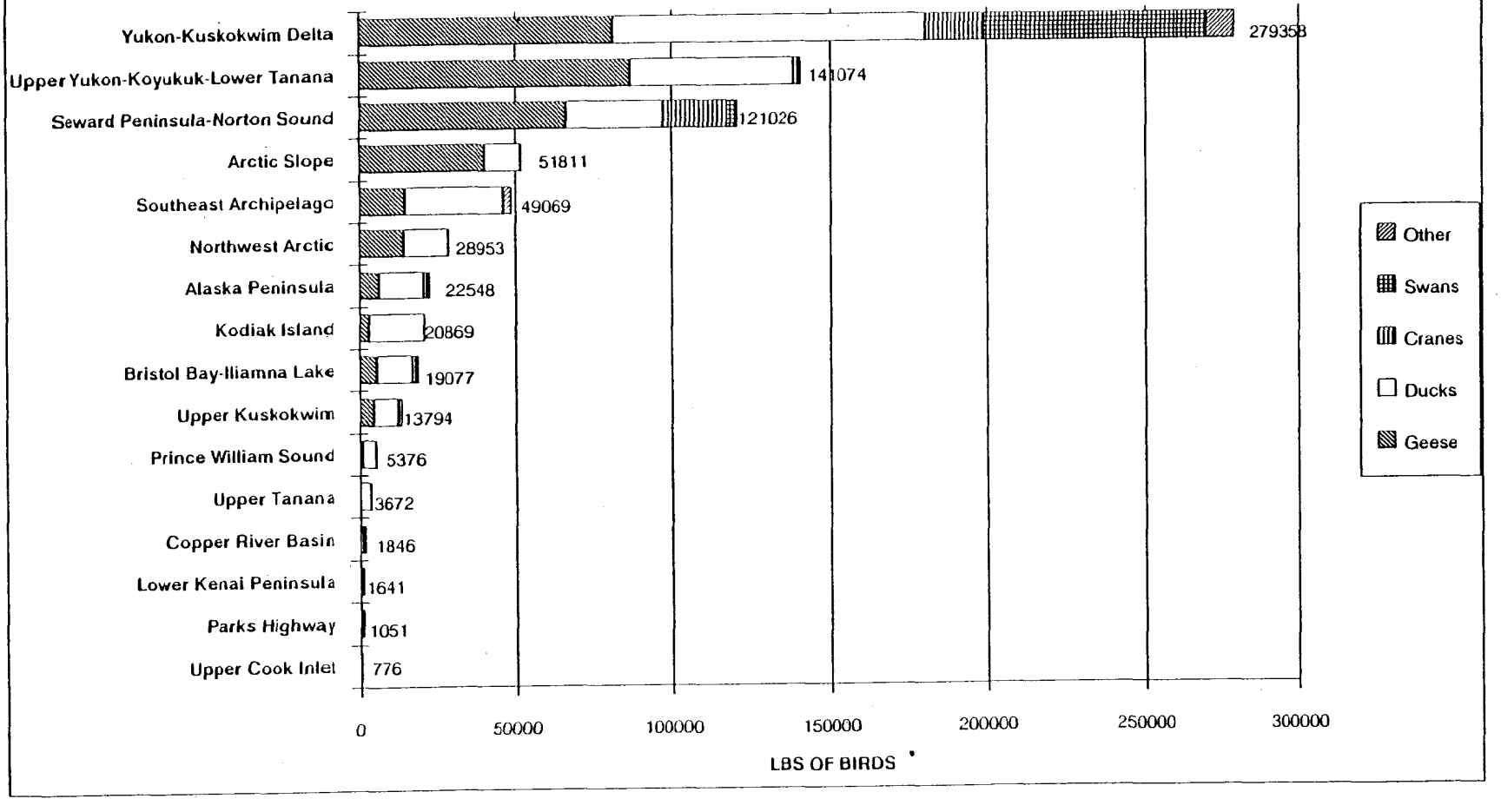


FIGURE 17. PER CAPITA NUMBERS OF SUBSISTENCE MIGRATORY BIRDS HARVESTED BY RURAL AREA, MID-TO-LATE 1980s

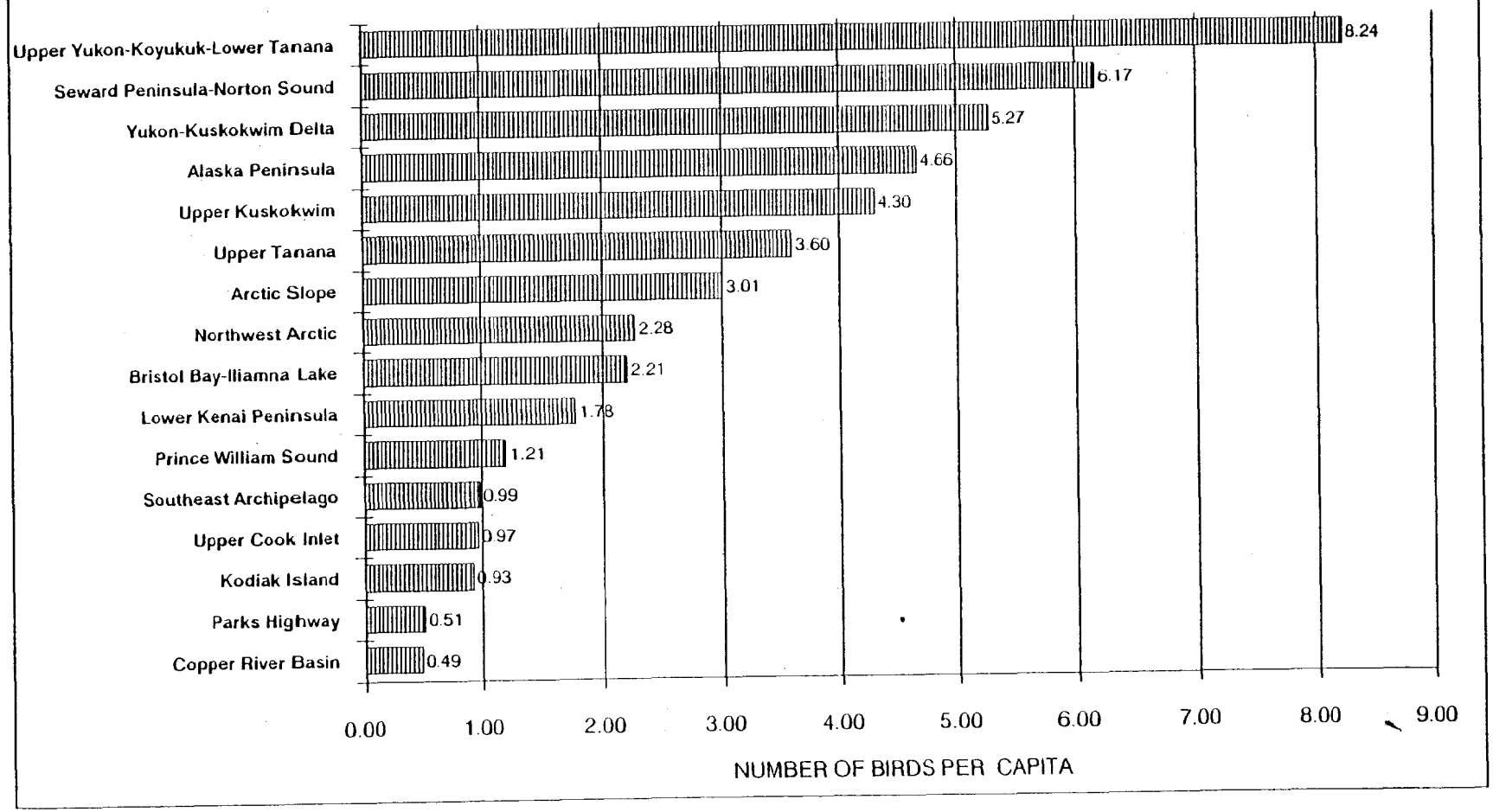


FIGURE 18. PER CAPITA LBS OF SUBSISTENCE MIGRATORY BIRDS HARVESTED BY RURAL AREA, MID-TO-LATE 1980s

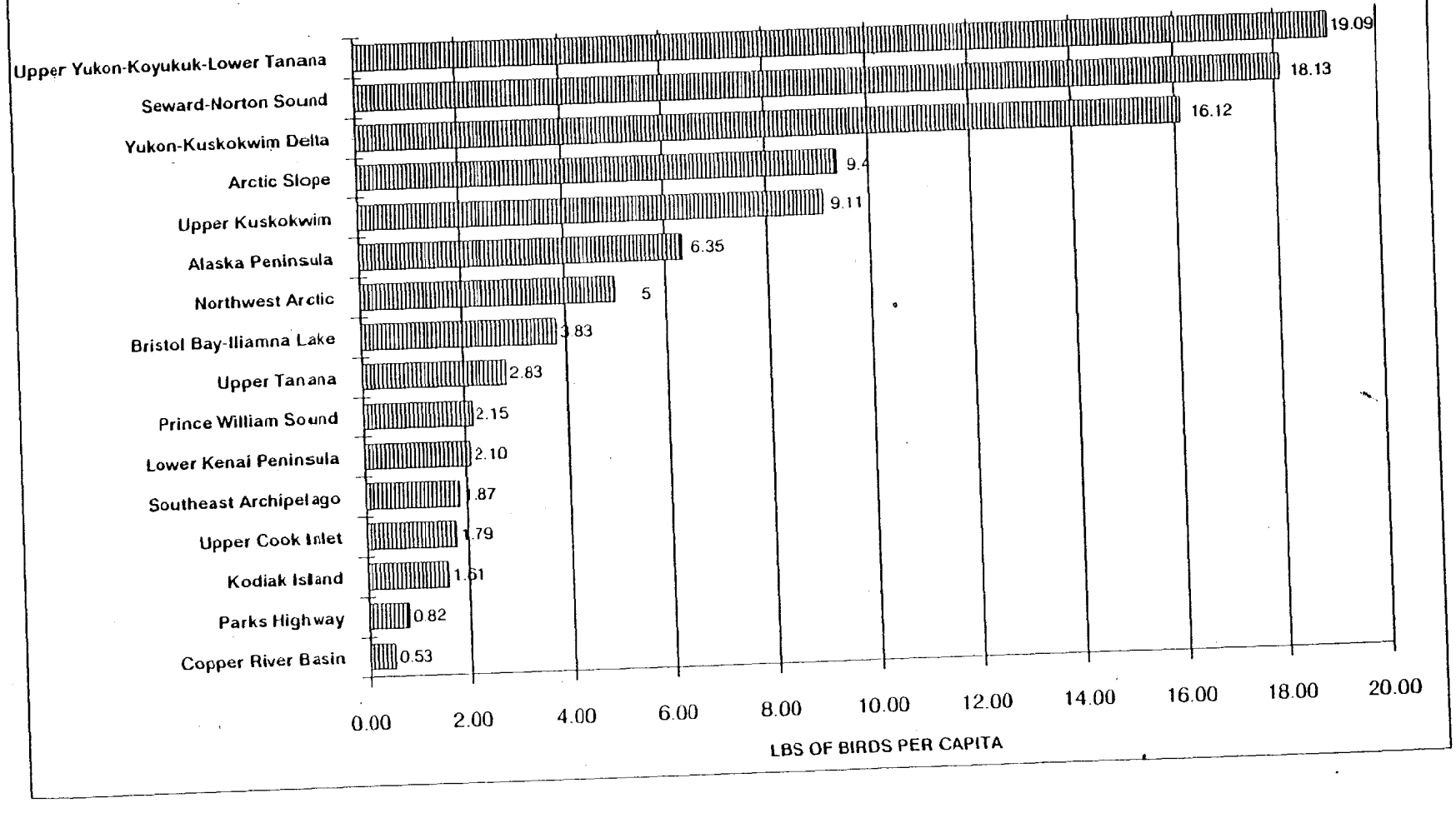
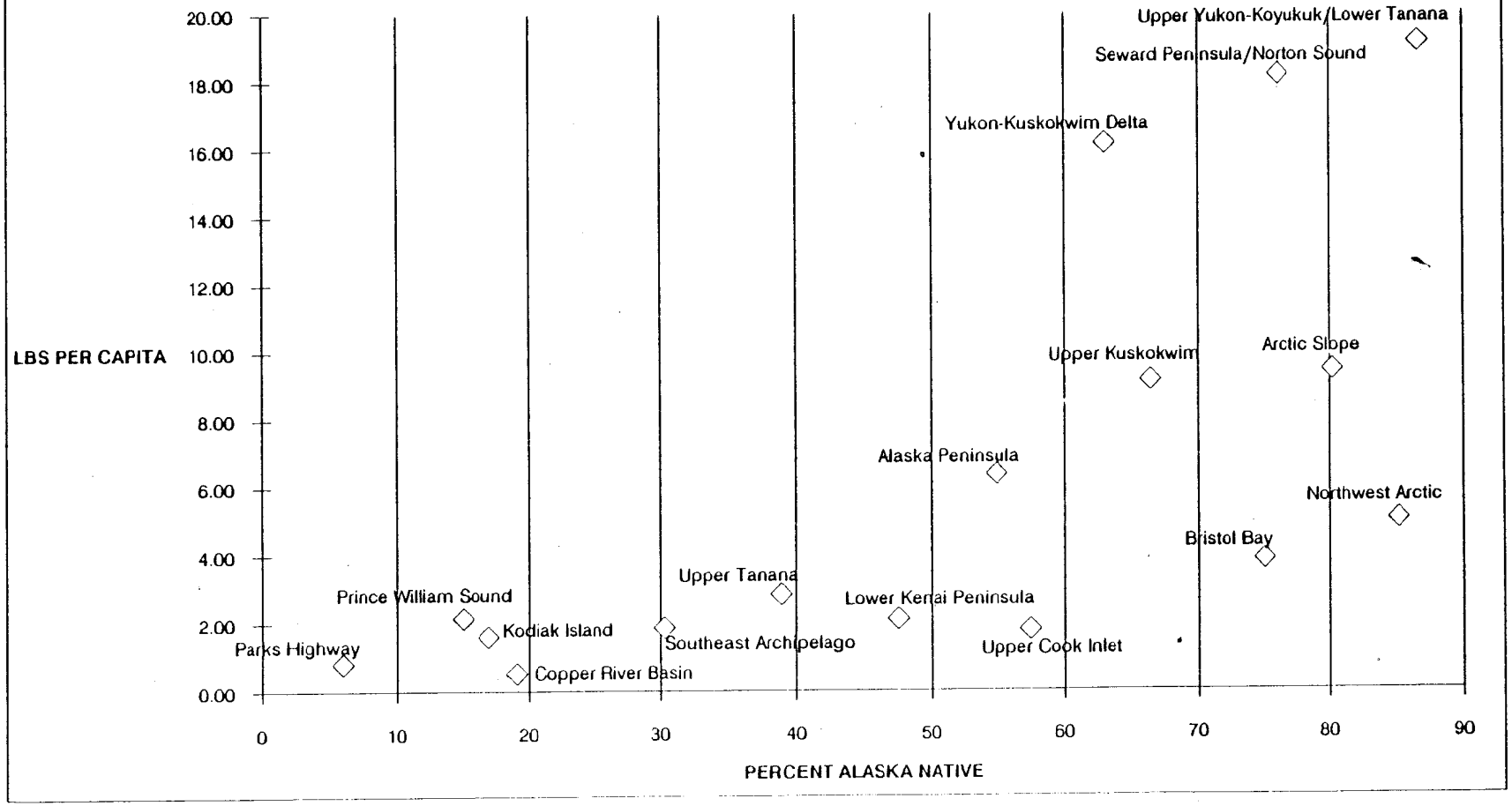


FIGURE 19. RELATIONSHIP OF PERCENT ALASKA NATIVE IN AREA BY MEAN PER CAPITA LBS OF MIGRATORY BIRDS HARVESTED



consistent with previous findings that the percent of Alaska Natives in a community is the single best predictor of total community subsistence harvest levels in Alaska (Wolfe and Walker 1987).

Subsistence bird harvests for food are important parts of the cultural traditions of Alaska's indigenous peoples. This statistical finding is simply an indicator of this fact. Rural areas with larger Alaska Native populations show greater subsistence bird uses because of these indigenous cultural practices are more prominent parts of the area's overall pattern of wild resource use. Bird harvests are lower in rural areas with larger non-Native populations because bird harvests play a different role in Euro-American cultural practices. As stated above, in Euro-American cultural traditions, wild birds do not figure as prominently as food items; hunting is more occasional and less central to a family's cultural and economic orientation. This Euro-American hunting pattern conforms more closely to the pattern codified in formal state and federal bird hunting regulations. Thus, while rural areas with predominantly Euro-American hunters display uses of migratory birds, the level of use is lower because they are conditioned by these cultural factors.

Household Participation Rates

It is difficult to estimate the absolute number of hunters of migratory birds in Alaska's rural areas because this question has not been systematically asked within surveyed communities. However, subsistence surveys commonly have asked whether households used, harvested, gave, or received migratory birds during the survey year. These rates of household participation are indicators of the percent of the rural population engaged in subsistence practices such as migratory bird use (Table 12 and Appendix Table 5). Figs. 20-23 show the median community value and range of community values within each region to illustrate the relative levels of household participation in using, harvesting, giving, and receiving migratory birds.

Several aspects of subsistence practices are revealed by these participation rates. First, in many rural communities a substantial portion of community households engage in bird hunting (Fig. 21, Appendix Table 5). It is common to find from 60-80 percent of community households harvesting migratory birds in communities of the Yukon-Kuskokwim Delta, Arctic Slope, Alaska Peninsula, Bristol Bay, Kodiak Island, Seward Peninsula, and Upper Yukon-Koyukuk-Lower Tanana regions. For these communities, bird hunting during traditional seasons is a widespread practice. The seasonal arrival of birds in the community's hunting area triggers a noticeable surge of hunting activity by community members. In these communities, a majority of households will contain at least one active bird hunter; larger households will contain several. Bird hunting is a type of subsistence activity conducted by adolescent males as well as by older adult males, which increases the rates of household participation. Despite the uncertain legal status of spring hunting, the traditional subsistence practices are openly conducted as part of normal community life.

Second, the proportion of community households using birds is typically higher than the proportion of households harvesting birds (Fig. 23, and compare Fig. 20 with Fig. 21). For instance, in Perryville (an Alutiiq community along the Pacific coast of the Alaska Peninsula), 95 percent of community households used migratory birds, while 55 percent of community household harvested them. The wider household use in comparison with household harvest results from the sharing of birds by harvesters with non-harvesting households. Rates of household giving and receiving migratory birds have been collected for some communities (Figs. 22 and 23), and illustrate that birds are frequently shared between households in many rural communities. Using the Perryville case example, 20 percent of households reported giving birds to other households, and 70 percent of households reported receiving birds from

TABLE 12. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS FOR THE MEDIAN COMMUNITY OF EACH AREA

Rural Area	Use	Harvest	Give	Receive
Copper River Basin	7.1	7.1	3.8	0
Parks Highway	11.8	10.4	0	0
Southeast Archipelago	22.8	17.0	5.8	7.6
Lower Kenai-Upper Cook Inlet	51.9	35.2	20.4	27.8
Northwest Arctic	51.9	38.6	20.0	16.5
Upper Tanana	55.6	44.4	26.7	20
Bristol Bay	70.4	47.4	22.5	25
Prince William Sound	56.3	50.0	33.3	16.7
Alaska Peninsula	85.0	55.0	28.0	50.0
Kodiak Island	76.4	60.0	--	--
Arctic Slope	83.3	71.4	60.0	55.5
Upper Yukon-Koyukuk-Lower Tanana	--	77.0	26.7	30.8
Seward Peninsula-Norton Sound	80.0	78.8	51.5	51.5
Yukon-Kuskokwim Delta	--	88.9	54.5	72.7

TABLE 12B. MINIMUM ESTIMATE OF NUMBER OF HUNTERS OF MIGRATORY BIRDS PER RURAL ALASKA AREA (BASED ON ASSUMPTIONS IN APPENDIX TABLE 28)

Rural Area	1990 Number of Households	Estimated Number of Hunters
Upper Cook Inlet	86	28
Parks Highway	505	41
Lower Kenai Peninsula	231	49
Copper River Basin	1014	69
Upper Tanana	674	213
Prince William Sound	1022	269
Alaska Peninsula	651	274
Bristol Bay-Iliamna Lake	1480	579
Kodiak Island	4083	585
Aleutian-Pribilof Islands	2378	764
Arctic Slope	1673	769
Northwest Arctic	1526	904
Seward Peninsula-Norton Sound	2371	1211
Southeast Archipelago	9731	1361
Upper Yukon-Koyukuk-Lower Tanana	2248	1600
Yukon-Kuskokwim Delta	4969	3385
TOTAL	34642	12101

Note: Assumes a minimum of one hunter per harvesting household.

FIGURE 20. COMMUNITY USE OF MIGRATORY BIRDS: RANGE AND MEDIAN COMMUNITIES BY AREA

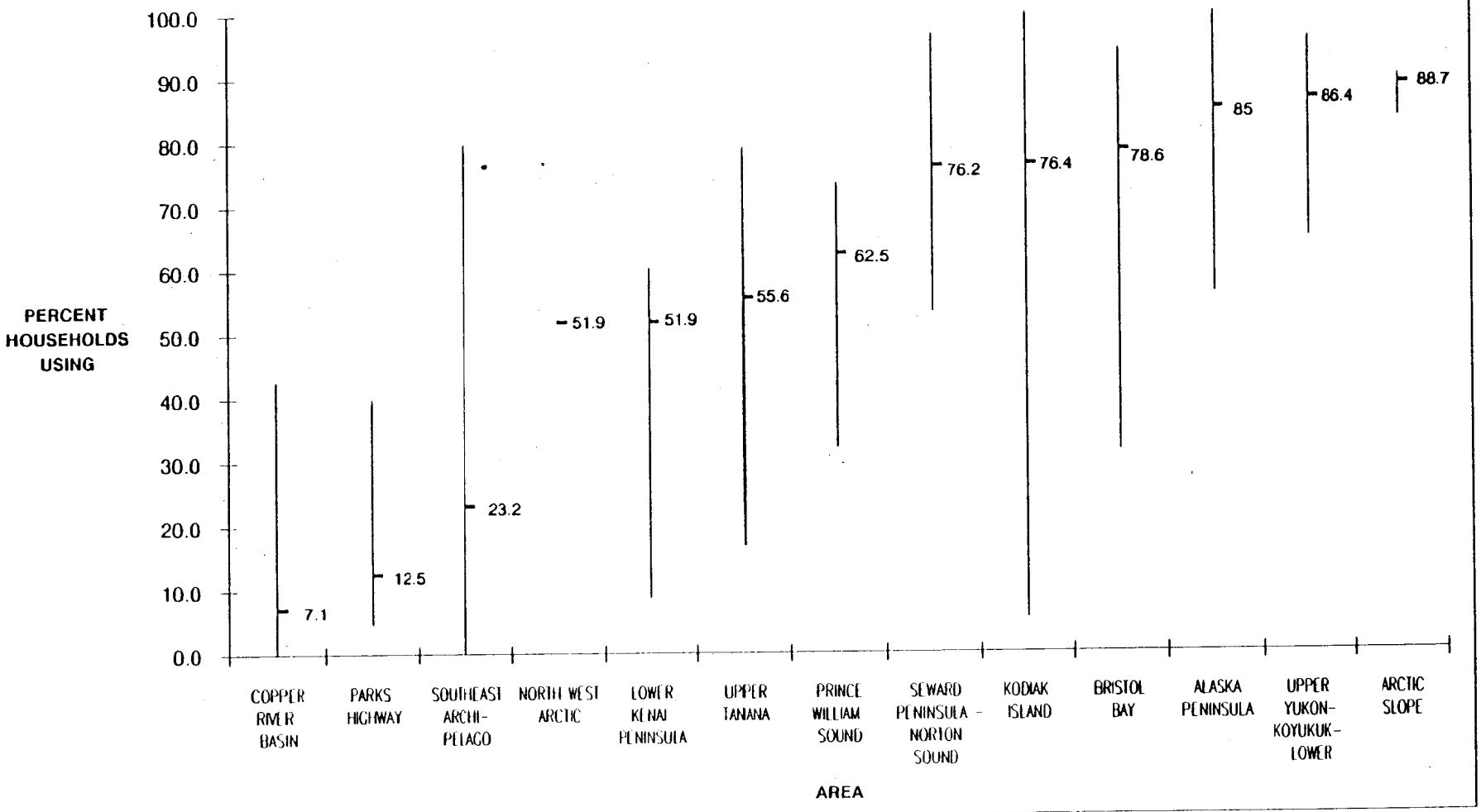


FIGURE 21. COMMUNITY HARVEST OF MIGRATORY BIRDS: RANGE AND MEDIAN COMMUNITIES BY AREA

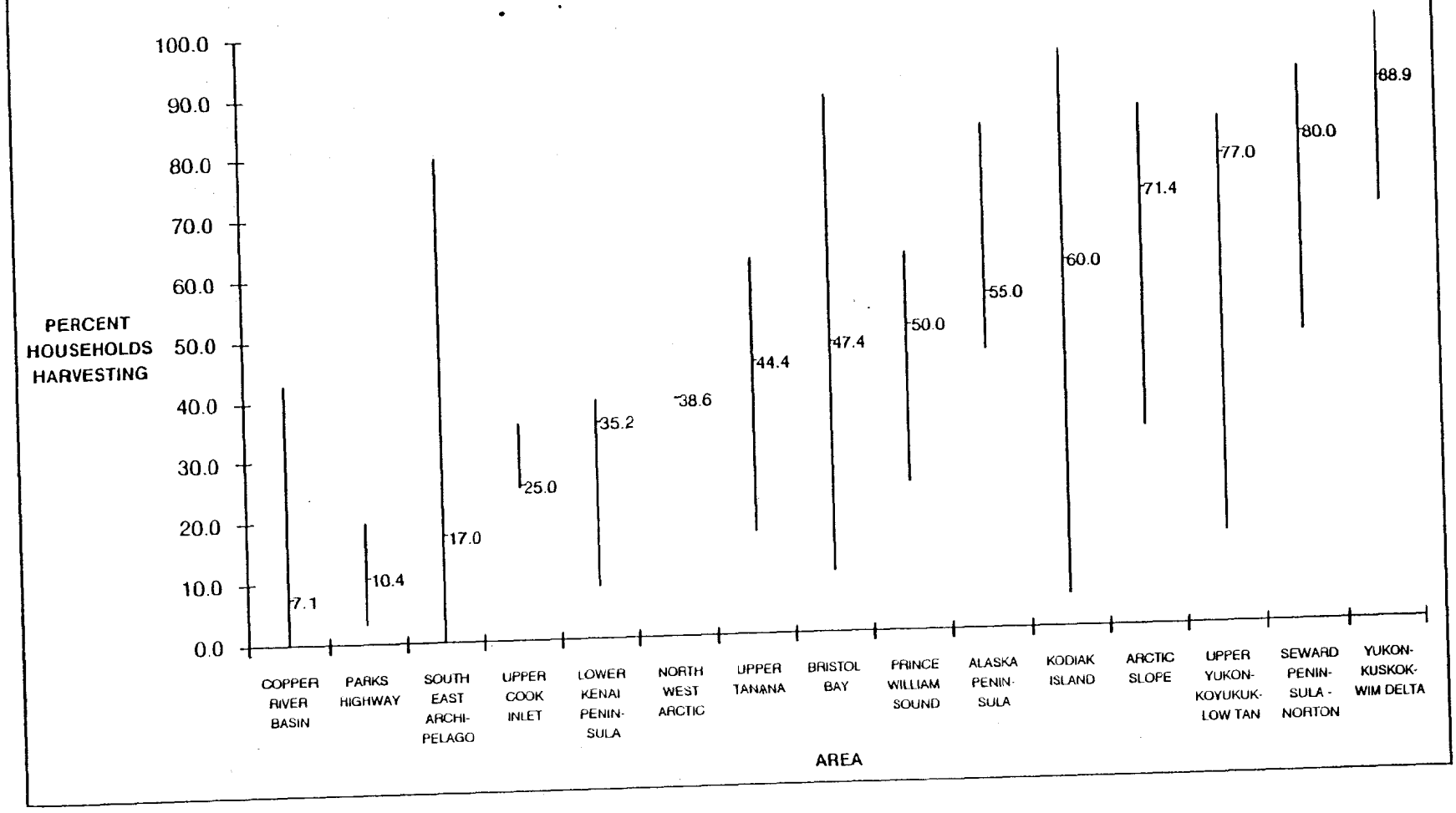


FIGURE 22. COMMUNITY GIVING OF MIGRATORY BIRDS: RANGE AND MEDIAN COMMUNITIES BY AREA

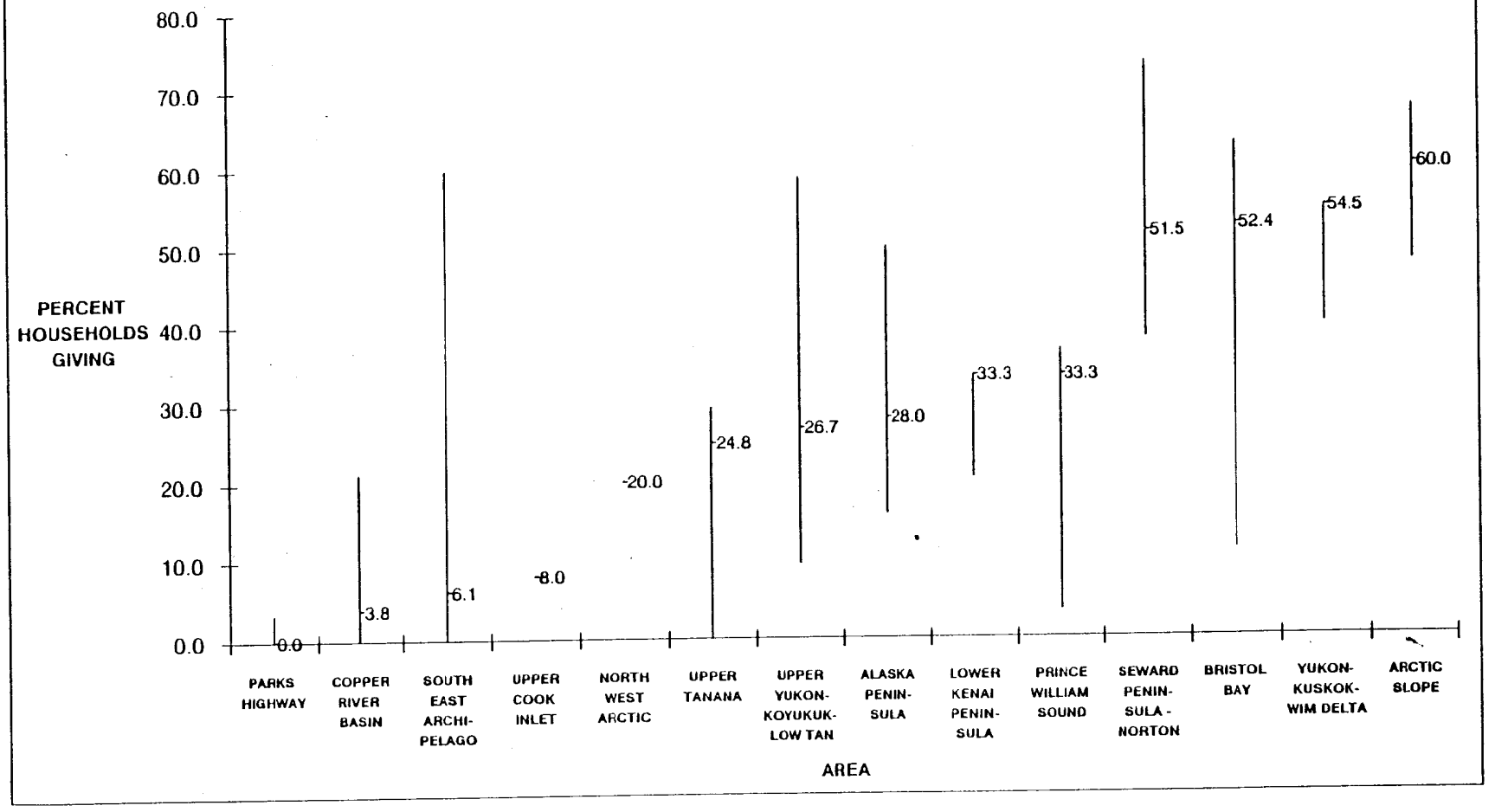


FIGURE 23. COMMUNITY RECEIVING OF MIGRATORY BIRDS: RANGE AND MEDIAN COMMUNITIES BY AREA

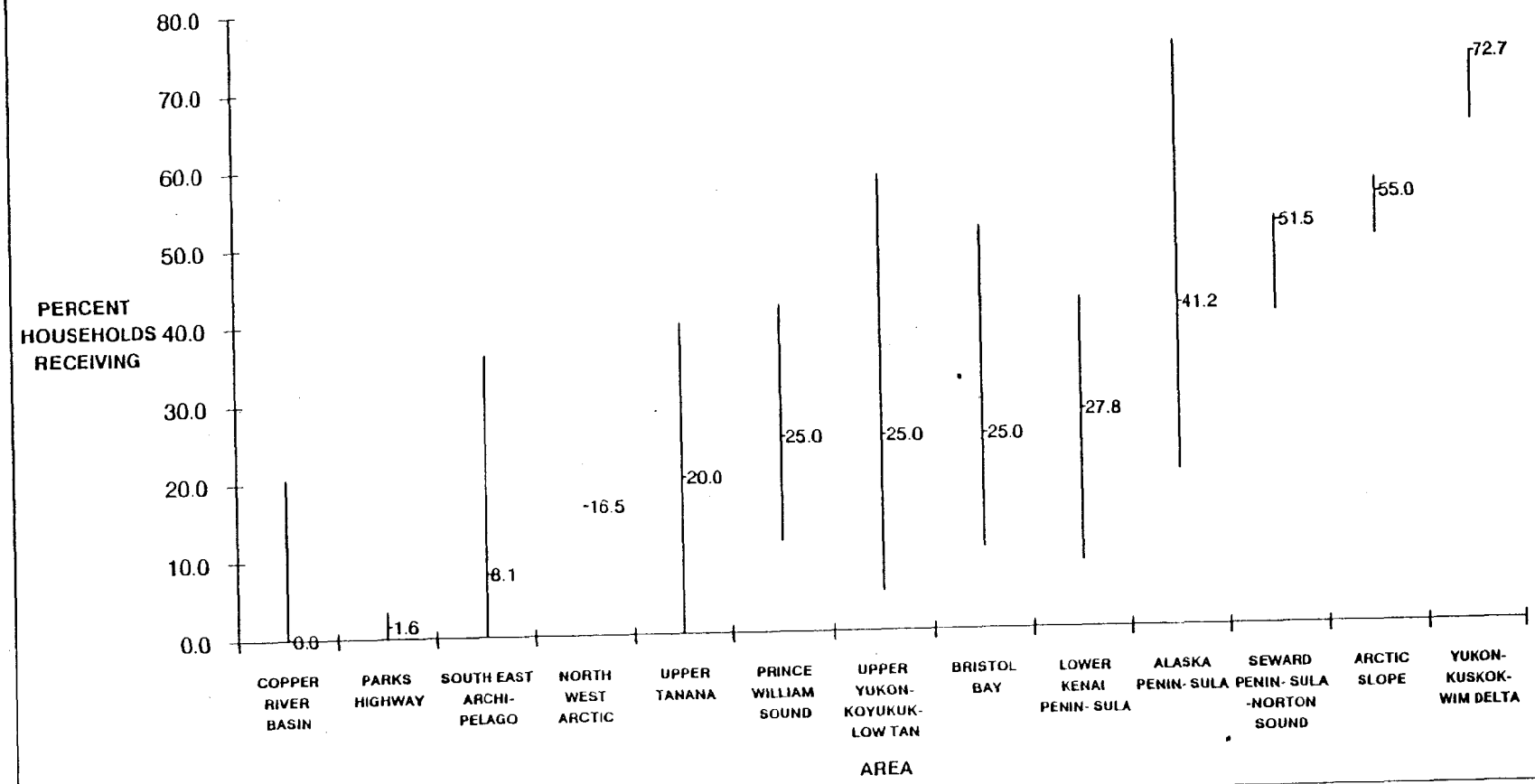
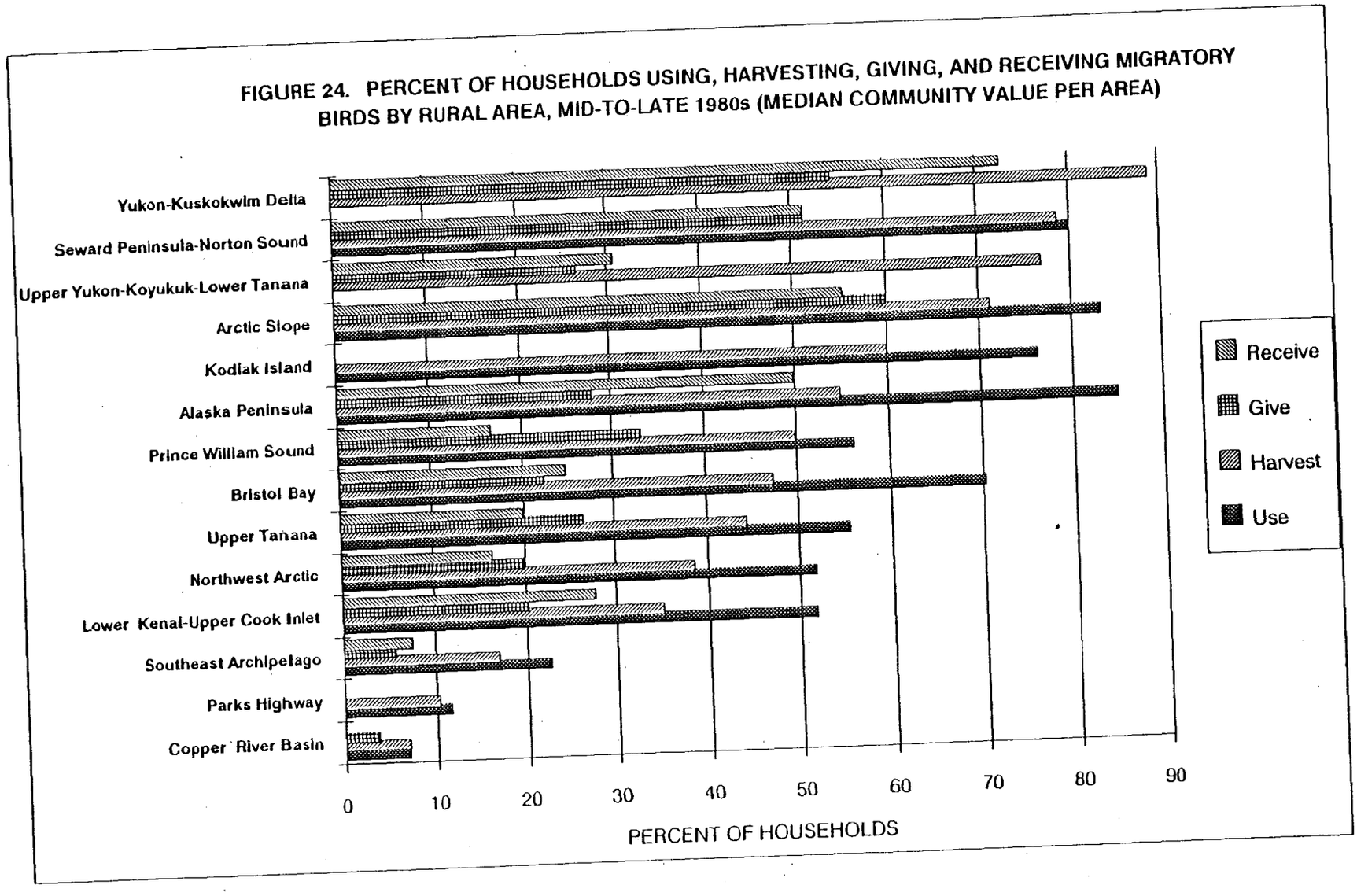


FIGURE 24. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING, AND RECEIVING MIGRATORY BIRDS BY RURAL AREA, MID-TO-LATE 1980s (MEDIAN COMMUNITY VALUE PER AREA)



other households. This suggests that there were some relatively productive bird hunting households in Perryville (about half of the 55 percent which hunted), who shared their harvests with a large proportion of community households.

In general, most sharing of subsistence products in Alaska Native communities occurs between households linked by kinship relationships, such as along parent-child and sibling-sibling lines. Subsistence harvesting and processing are activities coordinated by members of multi-household kinship groups, commonly containing more than one generation. The households in the community identified as most productive in a subsistence survey tend to be those with older, larger, experienced work forces and a full complement of subsistence equipment (such as boats, outboard motors, snowmachines, smokehouses, and camp facilities). In demographic terms, these tend to be two-parent households with some adolescent children and/or grandchildren. The relatively less-productive households tend to be those containing the very elderly, the infirm or disabled, single mothers with young children, or young adults with as yet few economic or social obligations. The demographically-mature household units report producing most of the subsistence foods with their labor and equipment, and this food is distributed to less-productive households in the community. Most subsistence foods are distributed in noncommercial transactions, measured by the "giving" and "receiving" rates. A smaller portion of local subsistence products is distributed through barter and traditional trade transactions. Hunting and sharing of migratory birds probably follow this general pattern of subsistence food production and distribution in the rural communities with high household participation rates. Copp (1988:31) indicates that 41 percent of the bird take on the Yukon-Kuskokwim Delta was harvested by the top 3 percent of productive bird hunters. Detailed analysis of migratory bird hunting patterns at the household level have not been conducted as yet with existing information.

Third, in three rural areas household participation rates in bird hunting are lower: the Copper River Basin, Parks Highway, and Southeast Archipelago (the median rural community household harvest rates are 7 percent, 12 percent, and 17 percent respectively) (Fig. 21). The rural populations of these areas are predominantly from Euro-American cultural traditions, where bird hunting practices tend to be recreational pursuits occurring during fall months. Alaska Natives represent minority population groups within these areas, so any traditional patterns of subsistence production and exchange will be statistically submerged by the Euro-American practices in regional means. Lower rates of bird hunting in the Copper Basin and Parks Highway areas also may result from the relatively fewer numbers of available birds.

Fourth, substantial variation is observed between community household participation rates within all geographic areas. For instance, within the Kodiak Island area, only 10.3 percent of Kodiak City households harvested migratory birds, while 68.8 percent of households harvested birds at nearby Ouzinkie. This suggests a variety of sociocultural factors are influencing a community's patterns of subsistence bird use in addition to geographic location, some of which are discussed in later sections.

Using the percent of households harvesting migratory birds for sampled communities, a minimum estimate can be made of the numbers of hunters of migratory birds in rural Alaska. As shown in Table 12B, it is estimated that at least 12,101 hunters annually harvested migratory birds for subsistence uses during the mid-to-late 1980s. This estimate makes the conservative assumption that there was one hunter in each household that reported harvesting migratory birds during the survey period. This is clearly a conservative assumption, as some portion of rural households have more than one bird hunter. Thus, the estimate of about 12,000 hunters must be considered a minimum estimate of the number of hunters of migratory birds in rural areas. To make this estimate, the percent of harvesting households was multiplied by the number of households per region, derived from the 1990 U.S. Census, which is the best estimate of households for the report's study period (see Table 12B). The other

assumptions and methods used in the estimate are shown in Appendix Table 28.

As shown in Table 12B, the areas with the largest migratory bird harvests also have the most hunters: the Yukon-Kuskokwim Delta (3,385 hunters), the Upper Yukon-Koyukuk-Lower Tanana area (1,600 hunters), the Southeast Archipelago (1,361 hunters), and Seward Peninsula-Norton Sound (1,211 hunters) (as stated above, these are minimum estimates of bird hunters). These areas were among the top four areas in terms of total estimated number of birds harvested (see Table 1). Substantial numbers of hunters also occur in Bristol Bay-Iliamna, Kodiak Island, Aleutian-Pribilof Islands, and the Arctic Slope. However, actual counts of hunters in rural areas have never been systematically made, so the lack of precise estimates of subsistence hunters of migratory bird in Alaska remains a major gap in the scientific literature.

Seasonality of Subsistence Harvests

The seasonality of subsistence harvests of migratory birds and eggs by major ecological area are shown in Figs. 25 and 26. Figure 25 summarizes 122 separate seasonal rounds of subsistence bird harvests for individual communities, which are presented in Fig. 26. Fig. 25 shows the percentage of sampled communities within an area that harvest migratory birds or eggs each month during the 1980s.

As shown by Figs. 25 and 26, traditional subsistence seasons for hunting migratory birds generally do not correspond with legal seasons established by state and federal managers.[7] Subsistence seasons commonly include spring and late summer-early fall hunting periods. For certain Alaska regions, subsistence hunting also occurs throughout the summer and during winter months. Gathering of eggs during spring and early summer is another common seasonal activity in certain regions.

The timing of subsistence harvests of migratory birds is influenced by ecological factors. Traditionally, subsistence harvests are linked to the natural schedules of migrating species in a community's hunting territory. Hunting and egg gathering activities are timed to correspond with the seasonal accessibility of birds and eggs. These vary between region and communities, depending upon the geographic position of hunters in relation to flyways, nesting habitat, and staging or feeding areas. Despite considerable community variation, there appear to be five, region-specific subsistence hunting schedules. Each of these is discussed below.

The Southeast Archipelago Seasonal Pattern

A general seasonal hunting pattern seems to characterize the rural communities of the Southeast Archipelago, based on a sample of nine communities. Bird hunting primarily occurs from late summer through December (Fig. 25). These hunting seasons correspond fairly closely with current legal regulations. However, five of the nine communities begin waterfowl hunting during August, which is earlier than the legal season opening (Fig. 26). An active

7. Regulatory hunting seasons for migratory birds in Alaska are established by the Alaska Board of Game, within general parameters established by the Pacific and Central Flyway Councils and the 1916 United States-Canada convention. Hunting is closed by international convention between March 10 and September 1. Currently, the Flyway Councils allow a maximum number of hunting days for Alaska between September 1 and March 10 which are allocated by the Alaska Board of Game. In 1985 (the mid-decade year), hunting for migratory birds was open for a three-and-one-half month period in Alaska. For most regions the open season was from September 1 through December 16, while for Kodiak Island and the Aleutians the open season was from October 8 through January 22.

FIGURE 25. SEASONALITY OF MIGRATORY BIRD HARVESTS BY REGION AND AREA, 1980s

REGION	MIGRATORY BIRD HUNTING												
SOUTHEAST ARCHIPELAGO	J	F	M	A	M	J	J	A	S	O	N	D	SAMPLE
SOUTHEAST	oooo	oo		oooo	oooo	oooo	oooo	OOxx	XXXX	XXXX	XXXX	XXXX	9 of 32 communities
PACIFIC-ALEUTIAN													
PRINCE WILLIAM SD	xxxx	xxxx	xxxx					OOxx	XXXX	XXXX	XXXX	xxxx	3 of 4 communities
LOWER KENAI PENIN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			XXXX	XXXX	XXXX	XXXX	2 of 3 communities
KODIAK ISLAND	XXXX	XXXX	XXXX	xxxx	xxxx			oo	xxxx	xXXX	XXXX	XXXX	6 of 9 communities
S ALASKA PENINSULA	XXXX	XXXX	XXXX	XXoo	X	XX			XXXX	XXXX	XXXX		5 of 9 communities
ALEUTIAN-PRIBILOF	XXXX	XXXX	XXXX	xxOO	OO				OOOO	OOOO	OXXX	XXxx	5 of 9 communities
SUBARCTIC COAST-INTERIOR													
N ALASKA PENINSULA				xxxx	xxxx	x		xxxx	XXXX	XXX			7 of 7 communities
BRISTOL BAY-ILIAMNA				oXXX	XXXX	OO		ooOO	OXXX	XXOO			11 of 18 communities
YUKON-KUSK DELTA			oooo	ooxx	XXXX	XXOO	OOOO	xxXX	XXXX	XXxx	oooo		17 of 38 communities
S NORTON SOUND				xxxx	XXxx	oooo		Ox	XXXx	ooo			3 of 3 communities
UPPER COOK INLET				XX	XXXX	xxxx		x	XXXX	XXXX			2 of 2 communities
UPPER KUSKOKWIM				ooXX	XXXX	XXxx	OOOO	xxxx	XXxx	Oo			9 of 13 of communities
U YUKON-KOYUKUK				oOXX	XXXX	XXxx	xxxx	XXXX	XXXX	OO			15 of 32 communities
ARCTIC													
SEWARD PEN-BERING	OOOO	OOOO	OOOO	xxXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	xOOO	OOOO	9 of 17 communities
NORTHWEST ARCTIC				O	OXXX	XXXX	XXXX	XXXX	XXXX	XXXx	xx		7 of 11 communities
ARCTIC SLOPE			o	OOOx	XXXX	XXXX	XXXX	XXXX	XXXX				7 of 11 communities
ROAD NETWORK													
UPPER TANANA			o	oooo	OOOO	oooo	OOOO	OOOO	XXXX	XxOO			5 of 7 communities

Percent of communities hunting: o = 1-24%; O = 25-49%; x = 50-74%; X = 75-100%

spring hunting season occurs during April and May at Yakutat, the one community which is geographically separated from the rest of the region. Occasional hunting through January and February is reported at Angoon, and occasional hunting from April through July is reported at Hoonah. Four of nine sampled communities report harvesting eggs during May or June: Angoon, Hoonah, Klawock, and Yakutat.

There are several species of birds that over-winter in the southeast region, so bird hunting is possible throughout the year. Respondents report that historically, Tlingits hunted small quantities of birds year-round. The contemporary seasonal rounds suggest that this pattern continues in certain communities. Legal season closures have been enforced in the southeast region for decades due to the accessibility of communities and the region's large resident Euro-American population. Also, Euro-American hunters in the region tend to agree with the fall and winter seasons codified in regulation. Because of this, some rural hunters are reluctant to report out-of-season harvests to outside researchers for fear of enforcement and other social sanctions.

The Pacific-Aleutian Seasonal Pattern

Another general seasonal hunting pattern occurs in the rural communities along the Pacific Coast stretching from Prince William Sound to the Aleutian Islands including the lower Kenai Peninsula, Kodiak Island, and the southern Alaska Peninsula (Fig. 25). Indigenous cultural groups in this Pacific-Aleutian region include the Eyak Indians, Alutiiq Eskimo (Chugach Eskimo, Koniag Eskimo, and Peninsula Eskimo), and the Aleut (the Aleuts of Pribilof Island are included in this region). While there is variation between communities, the general hunting period stretches from about September through about March, April, May or June, depending upon the community (Fig. 26). It is the hunting period through winter and into spring that distinguishes this region's seasonal pattern.

Like southeast Alaska, several bird species over-winter along the Pacific coast. The winter hunting is linked to this availability of birds. In addition, many of the Pacific coastal communities are located near major spring and fall flyways, such as Pacific Flyway birds passing through Prince William Sound, Kodiak Island, and the Alaska Peninsula on their north-south migrations. Similarly, several species pass along the Aleutian chain in a northeast-southwest migration. The seasonal hunting periods in fall and early spring suggest that birds are being taken as they pass through enroute to northern nesting areas and southern over-wintering areas.

Legal seasons have been enforced near larger population centers like Kodiak City and Cordova but usually not in the region's smaller communities. Of note are the May and June hunting at English Bay and Port Graham along the lower Kenai Peninsula and the August hunting in Prince William Sound (Fig. 26). St. Paul and St. George on the Pribilof Islands display a late hunting season starting in November and stretching through the winter to late May.

The Subarctic Coast-Interior Seasonal Pattern

A third general seasonal hunting pattern occurs in the communities of the subarctic coast and subarctic interior, including the North Alaska Peninsula, Bristol Bay-Iliamna Lake area, the Yukon-Kuskokwim Delta, Southern Norton Sound, Upper Cook Inlet, Upper Kuskokwim River, and Upper Yukon-Koyukuk River (Fig. 25). The Subarctic Coast-Interior subsistence hunting season is characterized by two pronounced hunting periods during spring and during late summer-early fall, with a decrease of hunting in between. Spring hunting

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY

LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

SOUTHEAST — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
ANGOON	xxxx	xx						XXXX	XXXX	XXXX	XXXX	XXXX	1980s	George & Bosworth 1988
HAINES								XX	XXXX	XXXX	XXXX	XXXX	1982	Mills & George 1983
HOONAH				xxxx	xxxx	xxxx	xxxx		XXXX	XXXX	XXXX	XXXX	1985	Schroeder & Kookesh 1990
KAKE								XXXX	XXXX	xxxx	xxxx	xxxx	1980s	Firman & Bosworth 1990
KLAWOCK									XXXX	XXXX	XXXX	XXXX	1982-85	Ellanna & Sherrod 1987
KLUKWAN								XX	XXXX	XXXX	XXXX	XXXX	1982	Mills & George 1983
TENAKEE SPRINGS									XXXX	XXXX	XXXX	XX	1986	Leghorn & Kookesh 1986
WRANGELL								XXXX	XXXX	XXXX	XXXX	XXXX	1980s	Cohen 1989
YAKUTAT				XXXX	XX				XXXX	XXXX	XXXX		1984	Mills & Firman 1986

PRINCE WILLIAM SOUND — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
CHENEGA BAY	XXXX	XXXX	Xxxx					XX	XXXX	XXXX	XXXX		1984-86	Stratton 1986
CORDOVA									XXXX	XXXX	XXXX	XXXX	Mid 1980s	Stratton 1989
TATITLEK	XXXX	XXXX	XXXX					XXXX	XXXX	XXXX	XXXX	XXXX	Mid 1980s	Stratton, pers. comm.

LOWER KENAI PENINSULA — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
ENGLISH BAY	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			XXXX	XXXX	XXXX	XXXX	1981-82	Stanek et al 1982
PORT GRAHAM	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			XXXX	XXXX	XXXX	XXXX	1981-82	Stanek et al 1982

KODIAK ISLAND — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
AKHIOK	XXXX	XXXX	XXXX	XXXX	XXXX				XXXX	XXXX	XXXX	XXXX	1982-83	KANA 1983
KARLUK	XXXX	XXXX	XXXX	XXX						XX	XXXX	XXXX	1982-83	KANA 1983
LARSEN BAY	XXX									XXX	XXXX	XXX	1982-83	KANA 1983
OLD HARBOR	XXXX	XXXX	XXXX							XXXX	XXXX	XXXX	1982-83	KANA 1983
OUZINKIE	XXXX	XXXX	XXXX	XXXX	XXXX			XX	XXXX	XXXX	XXXX	XXXX	1982-83	KANA 1983
PORT LIONS	XXXX	XXXX	XXXX	XXXX	XXXX				XXXX	XXXX	XXXX	XXXX	1982-83	KANA 1983

ALEUTIAN/PRIBILOF ISLANDS — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
AKUTAN	XXXX	XXXX	XXXX						XXXX	XXXX	XXXX	XX	1950s	Schroeder et al 1987
ATKA	XXXX	XXXX	XxxX	xx									1983	Veltre & Veltre 1983
ST GEORGE	XXXX	XXXX	XXXX	XXXX	XXxx						xxX	XXXX	1980	Veltre & Veltre 1981
ST PAUL	XXXX	XXXX	XXXX	XXXX	XXxx						xxX	XXXX	1980	Veltre & Veltre 1981
UNALASKA	XXXX	XXXX	XX						XXXX	XXXX	XXXX	XXXX	1982	Veltre & Veltre 1982

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY
LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

ALASKA PENINSULA — **MIGRATORY BIRD HUNTING**

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
CHIGNIK	xxxx	xxxx	xxxx	xx	x	xx			XXXX	XXXX	XXXX		1983-84	Morris 1987
CHIGNIK LAGOON	xxxx	xxxx	xxxx	xx	x	xx			XXXX	XXXX	XXXX		1983-84	Morris 1987
CHIGNIK LAKE	xxxx	xxxx	xxxx	xx	x	xx			XXXX	XXXX	XXXX		1983-84	Morris 1987
EGEGIK				xxxx	xxxx	x		XXXX	XXXX	XXx			1983-84	Morris 1987
IVANOFF BAY	xxxx	xxxx	xxxx	xx	x	xx			XXXX	XXXX	XXXX		1983-84	Morris 1987
KING SALMON									XXXX	XXX			1982-84	Morris 1985
NAKNEK									XXXX	XXX			1982-84	Morris 1985
PERRYVILLE	xxxx	xxxx	xxxx	xx	x	xx			XXXX	XXXX	XXXX		1983-84	Morris 1987
PILOT POINT				xxxx	xxxx	x		XXXX	XXXX	XXX			1980s	Fall & Morris 1987
PORT HEIDEN				xxxx	xxxx	x		XXXX	XXXX	XXX			1980s	Fall & Morris 1987
SOUTH NAKNEK									XXXX	XXX			1982-84	Morris 1985
UGASHIK				xxxx	xxxx	x		XXXX	XXXX	XXX			1980s	Fall & Morris 1987

BRISTOL BAY — **MIGRATORY BIRD HUNTING**

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
DILLINGHAM				XX	XXXX	XX		xxx	XXXX	XXxx			1980s	Fall et al 1986
IGIUGIG				XXX	XXXX				xxx	xx			1986	Morris 1987
ILIAMNA				XXX	XXXX				xxx	xx			1986	Morris 1987
KOKHANOK				XXX	XXXX				xxx	xx			1986	Morris 1987
MANOKOTAK				XX	XXxx	xx		XX	XXXX	XXXX			Mid 1980s	Schichnes & Chythlook 1986
NEW STUYAHOK				xxxx	xxxx	xx		xxxx	XXXX	XXxx			1983	Wolfe et al 1984
NEWHALEN				XXX	XXXX				xxx	xx			1986	Morris 1987
NONDALTON				XXX	XXXX				xxx	xx			1986	Morris 1987
PEDRO BAY				XXX	XXXX				xxx	xx			1986	Morris 1987
PORT ALSWORTH				XXX	XXXX				xxx	xx			1986	Morris 1987
TOGIAK				XXXX	XXXX			XX	XXXX	XX			1983	Wolfe et al 1984

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY

LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

YUKON-KUSKOKWIM DELTA — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
ALAKANUK					XXXX	XX		XXXX	XXXX	XXXX			1980-81	Wolfe 1981
ATMAUTLUAK					XXXX	XXXX	XXXX	XXXX	XXXX	XX			1983	Schroeder et al 1987
BETHEL				XX	XXXX	XXXX	XXXX	XXXX	XXXX	X			1983	Schroeder et al 1987
EMMONAK					XXXX	XX		XXXX	XXXX	XXXX			1980-81	Wolfe 1981
GOODNEWS BAY(1)				XXXX	XXXX					xxxx	xxxx		1983	Wolfe et al 1984
HOOPER BAY(1)			xxx	xxXX	XXXx	xxxx	xxxx	xxxX	XXXX	XXxx			1980s	Stickney 1984
KOTLIK					XXXX	XX		XX	XXXX				1976-77	Wolfe 1985
KWIGILLINGOK(1)			xxxx	xxXX	XXXx	xxx		xx	xXXX	XXxx			1980s	Stickney 1984
MARSHALL					XXXX	XXXX	XXXX	XXXX	XXXX				1983	Schroeder et al 1987
MOUNTAIN VILLAGE					XXXX	XX		XXXX	XXXX	XXXX			1980-81	Wolfe 1981
NEWTOK				XX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			1983	Schroeder et al 1987
NUNAPITCHUK				XX	XXXX	XX			XX	XX			1983	Andrews
QUINHAGAK				XX	XXXX	XX			XXXX	XXXX			1983	Wolfe et al 1984
RUSSIAN MISSION				XX	XXXX	XXXX	XXXX	XXXX	XXXX	XX			1984	Schroeder et al 1987
SHELDON POINT					XXXX	XX		XXXX	XXXX	XXXX			1980-81	Wolfe 1981
TULUKSAK				XX	XXxx			XX	XXXX				1980-83	Andrews & Peterson 1983
TUNUNAK			XX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXX			1985	Schroeder et al 1987

(1) Seasonal round created from narrative text

SOUTHERN NORTON SOUND — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
SHAKTOOLIK				XXXX	XX			XX	XXX				1980s	Thomas 1982
STEBBINS					XXXX			X	XXXX	XXX			1980-81	Wolfe 1981
UNALAKLEET				xxxX	XXXX	Xxxx			XXXX				1982	Jorgensen et al 1983

UPPER COOK INLET — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
TYONEK				xxxx	xxxx				XXXX	XXXX			1978-82	Foster 1982
UPPER YENTNA				xxxx	xxxx	xxxx		X	XXXX	XXXX			1982	Fall et al 1983

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY
LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

UPPER KUSKOKWIM — **MIGRATORY BIRD HUNTING**

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
CHUATHBALUK				XX	XXXX	xxxx	xxxx	xxXX	XX				1982-83	Charnley 1984
LIME VILLAGE				XXXX	xxxx	xx		XXXX	XXXX				1976-83	Karl 1983
LOWER KALSKAG				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX				1983	Schroeder et al 1987
McGRATH				xx	xxxx				xx	x			1983	Stokes 1984
NIKOLAI				XX	XXXX	xxxx	xxxx	xxxx	xxXX	x			1983	Stokes 1984
SLEETMUTE				XX	XXxx	xxxx	xxxx	xxXX	XX				1982-83	Charnley 1984
STONY RIVER				XX	XXXx	xxxx		XXXX					1980-84	Karl 1985
TAKOTNA				X	XXXX	Xxx			XXxx	xx			1983	Stokes 1984
TELIDA				XX	XXXX	XX		x	XXX				1983	Stokes 1984

UPPER YUKON-KOYUKUK — **MIGRATORY BIRD HUNTING**

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
ALATNA-ALLAKAKET				xx	XXXX	xx		xxxx	XXXX				1982	Marcotte & Haynes 1985
ARCTIC VILLAGE					XXXX	xxxx	xxxx	xxxx	XXXX				1970-82	Caulfield 1983
BEAVER				xXX	XXXX	XXxx	xxxx	xxXX	XXXX	xx			1984-85	Sumida 1989
BETTLES-EVANSVILLE				xx	XXXX	xx		xxxx	XXXX				1982	Marcotte & Haynes 1985
BIRCH CREEK				XX	XXXX	XXxx	xxxX	XXXX	XXXX	XX			1970-82	Caulfield 1983
CHALKYITSIK				XXX	XXXX	xxxx	xxxx	xxxx	XXXX	XX			1970-82	Caulfield 1983
FORT YUKON				XX	XXXX	xxxx	xxxx	XXXX	XXXX	XX			1970-82	Caulfield 1983
GALENA				xXX	XXXX	Xxxx		xxXX	XXXX				1980-85	Marcotte 1990
HUGHES				xx	XXXX	xx		xxxx	XXXX				1982	Marcotte & Haynes 1985
HUSLIA				XXXX	XXXX		XXXX	XXXX					1983	Marcotte 1986
MINTO				xx	XXXX	XX		xx	xxxx				1960-84	Andrews 1988
NENANA					XXXX			xx	XXXX	xx			1930-82	Case, pers. comm.
STEVENS VILLAGE				XXXX	XXXX	XXxx		xxXX	XXXX	xx			1983-84	Sumida 1988
TANANA				xXX	XXxx	XXxx	xxxx	xxxx	XXXX	xx			1968-88	Case 1990
VENETIE					XXXX	XXxx	xxxx	XXXX	XXX				1970-82	Caulfield 1983

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY
LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

SEWARD PENINSULA — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
BREVIG MISSION				xxxx	XXXX	XXXX	xxxx	xxxx	XXXX	xxxx			1984	Magdanz, pers. comm.
DIOMEDE				XX	XXXX	XXXX	X						1960-80	Ellanna 1983
GAMBELL	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	1972-80	Ellanna 1983
GOLOVIN				xxxx	XXXX	XXXX	xxxx	xxxx	XXXX	xxxx			1982	Magdanz, pers. comm.
KING ISLAND					XXX	XXXX	XXXX						1960-80	Ellanna 1983
NOME	xxxx	xxxx	xxxx	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	Xxxx	xxxx	xxxx	1982	Wolfe & Ellanna 1983
SAVOONGA	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	1972-80	Ellanna 1983
SHISHMAREF			X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X		1982	Sobelman 1985
WALES				X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XX		1972-80	Ellanna 1983

NORTHWEST ARCTIC — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
AMBLER					xXX	XXXX	XXXX	XXXX	XXXX	XXXX	xx		1970-80	Anderson et al 1977
KIANA				x	XXXX	XXxx	xxxx	xxxx	xxxx	XXXX	x		1970-80	Anderson et al 1977
KIVALINA(1)				X	XXXX	Xxxx	xxxx	xxxx					1982-84	Burch 1985
KOBUK					xXX	XXXX	XXXX	XXXX	XXXX	XXXX	xx		1970-80	Anderson et al 1977
NOATAK					x	XXXX	xxxx	xxxx	xxxx	xxxx			1970s	Uhl & Uhl 1979
NOORVIK				x	XXXX	XXxx	xxxx	xxxx	xxxx	XXXX	xx		1970-80	Anderson et al 1977
SHUNGNAK					xXX	XXXX	XXXX	XXXX	XXXX	XXXX	xx		1970-80	Anderson et al 1977

(1) Seasonal round created from narrative text.

ARCTIC SLOPE — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
ANAKTUVUK PASS				xx	xxxx	xxxx	xxxx	xxxx	XXXx				1980s	North Slope Borough 1978
NUIQSUT					xX	XXXX	xxxx	xxxx	XXXx				1980s	Hoffman et al 1979
BARROW				xxxx	XXXX	xxxx	XXXX	XXXX	xxxx				1987	Braund et al 1988
KAKTOVIK				XXXX	XXxx	xxxx	xxxx	xxxx	xxxx				Late 1970s	Jacobsen & Wentworth 1982
POINT HOPE					XXXX	XXXx	xxxx	xxxx	xXXx				1980s	North Slope Borough 1977
POINT LAY				XX	XXXX	XXxx	xxxx	xxXX	xx				1987	Pedersen 1988
WAINWRIGHT				x	xXXX	XXXX	xxxx	xxxX	Xxxx				1988	Braund et al 1989

PARKS HIGHWAY — MIGRATORY BIRD HUNTING

	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
CHASE-GOLD CK									XXXX	XXXX			1968-86	Stanek et al 1988

FIGURE 26. SEASONAL ROUND OF MIGRATORY BIRD HARVESTS BY COMMUNITY
LEGEND: X(Hunting Occurs), x(Hunting Occasionally Occurs)

UPPER TANANA	MIGRATORY BIRD HUNTING													
	J	F	M	A	M	J	J	A	S	O	N	D	PERIOD	SOURCE
DOT LAKE									XXXX	xx			1980-82	Martin 1983; Marcotte, *pers. com*
NORTHWAY									XXXX	XXXX			1983-84	Case 1986
TANACROSS					xxxx		xxxx	xxxx	XXXX				1983-84	Haynes et al 1984
TETLIN			x	xxXX	XXxx	xxxx	xxxx	xxxx	XXXX	x			1983-84	Halpin 1987
TOK									XXXX	XXXX			1983-84	Haynes et al 1984

typically begins during April, continues through May, and tapers off during early June. In some communities, some occasional hunting occurs during late June and July. A second distinct hunting period begins during August, continues through September, and tapers off during October or November. The indigenous cultural groups in this region include Yup'ik Eskimo groups and several Athabaskan Indian groups (Dena'ina, Ingalik, Holikachuk, Koyukon, Gwich'in, Tanana, and Upper Kuskokwim).

With few exceptions, migratory birds tend not to over-winter in the Alaska subarctic, which accounts for the lack of hunting from October through mid-March. Migratory birds begin to arrive during late March and April as the snow cover melts from coastal tundra and interior wetlands. Traditionally, the arrival of birds is greeted with great excitement, as they represent for many communities some of the first available fresh food after a winter and spring of dried or frozen food stocks stored the previous summer and fall. Communities which are located along major flyways and staging areas commonly have access to large concentrations of birds for a period of several weeks. For some communities the birds move through and diminish as spring progresses, but for communities near nesting habitat, large numbers of birds may continue to be present throughout the summer. Hunting of migratory birds typically decreases during summer when other subsistence or commercial activities absorb a household's time, especially fishing for salmon, a subsistence staple for subarctic communities. While birds are potentially accessible to many communities at that time, they are not actively hunted because competing activities are assessed to be more important to harvesters. Local customs and rules also influence the timing of hunting patterns, such as customary prohibitions on hunting during nesting in certain communities. Hunting generally picks up during August and continues as birds congregate and move south out of the region.

There has been minimal enforcement of legal hunting seasons in this large region, primarily because of its remoteness from administrative centers and because of the strength of traditional cultural practices. Of note is the August hunting period in Upper Yukon-Koyukuk, Upper Kuskokwim, and Yukon-Kuskokwim Delta communities (Fig. 26). Also, an October hunting period is more pronounced for subarctic coastal communities (Yukon-Kuskokwim Delta, Bristol Bay, Upper Cook Inlet) in comparison with subarctic interior communities (Upper Yukon-Koyukuk and Upper Kuskokwim), which suggests that bird migrations are more prolonged or birds more accessible later along the coast in comparison with the interior.

The Arctic Seasonal Pattern

A fourth general seasonal hunting pattern characterizes communities of the Arctic region, including the Seward Peninsula, northwest Arctic, and Arctic Slope (Fig. 25). In this large region, hunting generally begins during April and continues throughout spring, summer, and early fall until about late October, with certain variations for particular communities. It is the relatively continuous participation in hunting throughout the summer that distinguishes this regional seasonal pattern. As with the subarctic coast-interior area, there has been minimal enforcement of legal regulations in arctic communities because of remoteness from administrative centers and strong cultural practices of the predominantly Inupiat Eskimo population.

The overall duration of bird harvests in the Arctic is tied to the spring arrival and fall departure of migratory birds. Migratory birds do not over-winter in the Arctic; however, sources report hunting throughout the winter for unnamed species at Gambell and Savoonga on St. Lawrence Island and for oldsquaw ducks at Nome on southern Seward Peninsula (Ellanna 1983; Wolfe and Ellanna 1983). The presence of hunting throughout the summer for many Arctic communities is reflective of migrations of particular species, such as eider migrations along the coast throughout June, July, and August near Barrow, or brant migrations in August

near Wainwright. The literature also reports that bird hunting frequently is combined with other summer subsistence activities, such as caribou hunting, berry picking, and fishing, depending upon the community.

The Road-Network Seasonal Pattern

Finally, a fifth seasonal pattern appears to characterize the Upper Tanana area and Parks Highway area: bird hunting primarily during September and October, with some hunting reported in spring and summer (Figs. 25 and 26). Probably this pattern represents a traditional spring and fall hunting pattern (as is general for the subarctic interior) modified by selective enforcement of the legal closed seasons. These rural communities are located along the road network, making them relatively accessible to Alaska's population centers in Fairbanks and Anchorage. Because of this, indigenous hunters commonly are reluctant to hunt or admit to hunting during traditional seasons outside the legal seasons. Also, Euro-American hunters, who represent a majority along the road network, typically ascribe to the fall hunting practices codified in regulation, and choose not to hunt in spring or summer. The actual seasonal patterns of hunting for particular communities are difficult to document under these conditions. This regional pattern probably also characterizes Copper River Basin communities, although seasons are not reported in the literature.

Harvest Levels by Season

While seasonal rounds depict general hunting seasons, levels of harvest are known to vary considerably throughout the season for particular communities. Most community seasonal rounds in the literature indicate the changing levels of hunting effort and productivity by season only in the most general fashion. Many studies distinguish "primary" harvest seasons from "secondary" or "occasional" harvest seasons, and these distinctions are presented in Fig. 26. However, only a few studies have collected actual bird harvests by season to show the relative productivity of different seasonal periods. This is a major data gap in the scientific literature. From a biological perspective, mature birds taken during spring prior to nesting have a different reproductive value for the total bird population than birds taken during fall and early winter.

Bird harvests by season have been collected in only 40 communities listed in Appendix Tables 7-24 and summarized by area in Tables 13 and 14 and Fig. 27. To illustrate the general timing of the rural harvest, "spring" in these tables refers to a pre-nesting period during which birds are migrating or preparing for nesting (about March through late May or early June); "mid-summer" refers to the short period of nesting and immediate post-hatch rearing (about early June through July); and "late summer-fall-winter" comprises the period of molting, congregation, migration, and wintering (about August through February). On the Yukon-Kuskokwim Delta, where seasonal information was collected during 1987, 54.8 percent of the migratory birds were taken during the "spring" period, 6.5 percent during the "mid-summer" period, and 38.6 percent during the "late summer-fall" period ("spring" combines what is called "spring" and "early summer" by Copp (1988), and "late summer-fall-winter" combines what is called "late summer" and "early fall" by Copp (1988), as shown in Appendix Table 9). Four other regions also reported the majority of the migratory birds harvested during the "spring" period: Bristol Bay-Lake Iliamna communities (85.6 percent during "spring"), Upper Yukon-Koyukuk-Lower Tanana communities (72.1 percent), Arctic Slope communities (59.3 percent), and Seward Peninsula-Norton Sound communities (59.2 percent). Two Lower Kenai communities reported slightly more birds taken during the "late summer-fall-winter" period (57.1 percent) in comparison with the "spring period" (42.9 percent).

TABLE 13. MIGRATORY BIRD HARVESTS (PERCENT OF BIRDS KILLED) BY SEASON AND AREA (MEAN PERCENT FOR COMMUNITIES WHERE INFORMATION IS AVAILABLE, BASED ON APPENDIX TABLE 7)

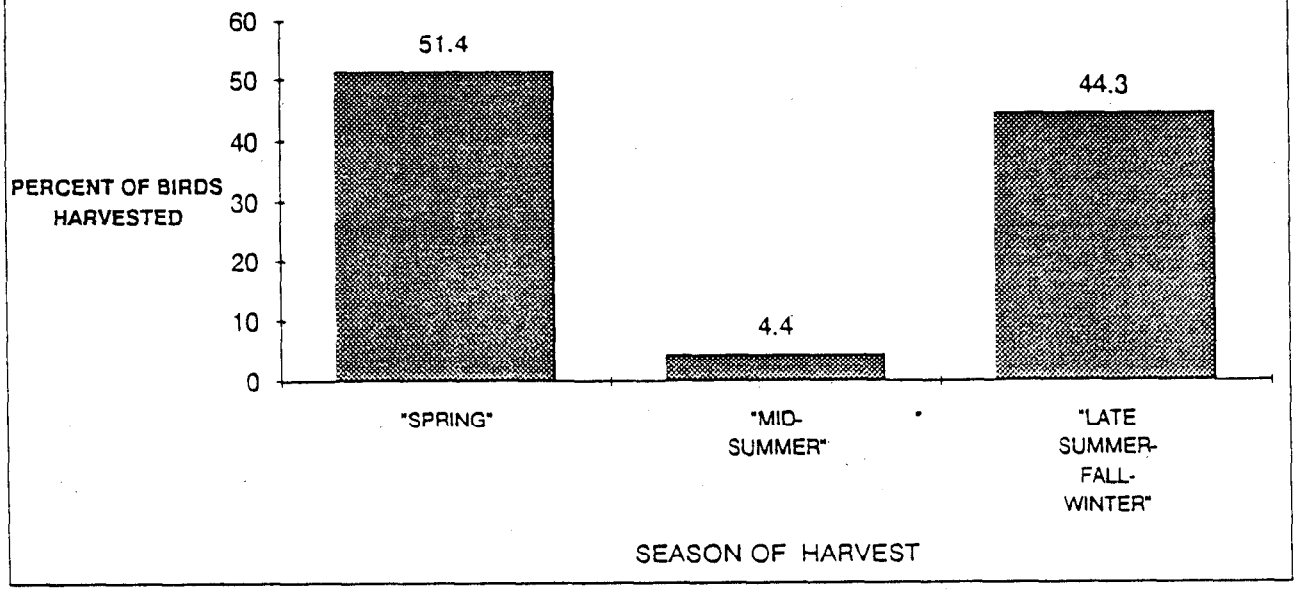
RURAL AREA	(n)	"SPRING"	"MID-SUMMER"	"LATE SUMMER-FALL-WINTER"	TOTAL
Alaska Peninsula	5	19.7		80.3	100.0
Lower Kenai Peninsula	2	42.9		57.1	100.0
Yukon-Kuskokwim Delta	18	54.8	6.6	38.6	100.0
Seward Peninsula-Norton Sound	4	59.2	1.8	39.0	100.0
Arctic Slope	2	59.3	17.8	22.9	100.0
Upper Yukon-Koyukuk-Lower Tanana	5	72.1	2.0	25.9	100.0
Bristol Bay	4	85.6		14.4	100.0

TABLE 14. ASSUMED RURAL SUBSISTENCE MIGRATORY BIRD HARVESTS BY SEASON AND AREA

RURAL AREA	"SPRING"	"MID-SUMMER"	"LATE SUMMER-FALL- WINTER"	TOTAL
Upper Cook Inlet	181	0	241	422
Parks Highway	0	0	654	654
Lower Kenai Peninsula	600	0	798	1398
Copper River Basin	0	0	1699	1699
Prince William Sound	1297	0	1727	3024
Upper Tanana	0	0	4670	4670
Upper Kuskokwim	4689	130	1685	6504
Bristol Bay-Iliamna Lake	9442	0	1588	11030
Kodiak Island	2414	0	9842	12256
Northwest Arctic	7815	2346	3017	13178
Alaska Peninsula	3257	0	13278	16535
Arctic Slope	9843	2954	3801	16598
Southeast Archipelago	0	0	25956	25956
Seward-Norton Sound	24405	742	16078	41225
Upper Yukon-Koyukuk-Lower Tanana	43889	1217	15767	60873
Yukon-Kuskokwim Delta	49989	6021	35210	91220
RURAL ALASKA	157821	13410	136011	307242
PERCENT	51.4	4.4	44.3	100.0

Assumptions: Upper Cook Inlet assumed to be like Lower Kenai Peninsula.
Prince William Sound assumed to be like Lower Kenai Peninsula.
Upper Kuskokwim assumed to be like Upper Yukon-Koyukuk-Lower Tanana.
Kodiak Island assumed to be like Alaska Peninsula.
Northwest Arctic assumed to be like Arctic Slope.
Upper Tanana , Parks Highway, Southeast Archipelago and Copper River Basin harvests assumed to be primarily fall-winter harvests.

FIGURE 27. ESTIMATED RURAL SUBSISTENCE MIGRATORY BIRD HARVESTS BY SEASON, BASED ON ASSUMPTIONS IN TABLE 14



By contrast, Alaska Peninsula communities reported only 19.7 percent of birds taken during the "spring" migration period and 80.3 percent taken during the "late summer-fall-winter" periods. This probably corresponds to a greater accessibility of birds during the fall migration along the Alaska Peninsula, where major fall staging areas exist. Other rural areas where the majority of birds probably are taken during the "late summer-fall-winter" period include the Southeast Archipelago, Copper Basin, and Parks Highway areas, however, seasonality information has never been collected. As stated above, the majority of hunters in these areas are from Euro-American cultural traditions where hunting during fall and winter is the customary practice.

It is difficult to generalize seasonal harvest levels to other regions from this relatively incomplete selection of communities. However, a statewide estimate of the seasonality of the total subsistence bird harvest is presented in Table 14 and Fig. 27, based on several assumptions about seasonal takes: Prince William Sound and Upper Cook Inlet areas are assumed to be like the Lower Kenai Peninsula area; the Upper Kuskokwim area is assumed to be like the Upper Yukon-Koyukuk-Lower Tanana area; Kodiak Island is assumed to be like the Alaska Peninsula area; the Northwest Arctic area is assumed to be like the Arctic Slope area; and the harvests of the Southeast Archipelago, Copper Basin, Parks Highways, and Upper Tanana areas are assumed to occur during the "late summer-fall-winter" period. With these assumptions, 51.4 percent of the rural subsistence migratory bird harvest (157,821 birds) was taken during the "spring" period, 4.4 percent (13,410 birds) during the "mid-summer" period, and 44.3 percent (307,242 birds) during the "late summer-fall-winter" period. As stated above, these are extremely rough estimates, as precise seasonal productivity information for most communities does not exist.

Subsistence Harvests by Species

The species composition of Alaska's subsistence harvest cannot be precisely estimated from the current harvest survey information. Species information has been collected for 77 sampled communities in 11 areas, summarized in Appendix Table 6. A general, relative rank ordering of bird species harvests can be reconstructed from this group of communities, shown by region in Table 15 and Fig. 28. The expanded community harvests were summed within each area and converted to a rank. These statistics are useful to illustrate in general terms the types and relative positions of particular species in the subsistence harvest; however, these generalizations are based on preliminary and incomplete information and cannot be translated into a state-wide estimate of the numbers of harvested birds by species.

As shown in Table 15 and Fig. 28, overall there were at least 32 types of birds reported in Alaska's rural subsistence harvest: 15 types of ducks, 8 types of geese, 7 types of sea or shore bird, sandhill crane, and tundra (whistling) swan. Of the ducks, mallard, scoter, pintail, and "other duck" were most commonly reported types taken for regions that harvested them (using the mean rank across areas), followed by teal, eider, wigeon, old squaw, goldeneye, scaup, merganser, shoveler, gadwall, bufflehead, and harlequin. Of the geese, "other Canada" (probably primarily lesser Canada), lesser Canada, and cackling Canada head the list, followed by "other goose" (primarily unidentified geese), snow, white-fronted, brant, and emperor. Swan and crane fall in the middle ranks of the birds. The list of other birds taken include puffin, "other shorebird", murre, gull, loon, "other seabird", and tern.

Mallard harvests ranked high (1st to 4th) in all areas except the Northwest Arctic (8th) and Arctic Slope (10th). Pintail harvests also ranked high in most regions. Except for Canadian geese harvests, which are ranked relatively high for many regions, harvests of the geese species are more variable across regions and tend to fall in the mid-range ranks, being harvested in somewhat fewer numbers than particular duck species.

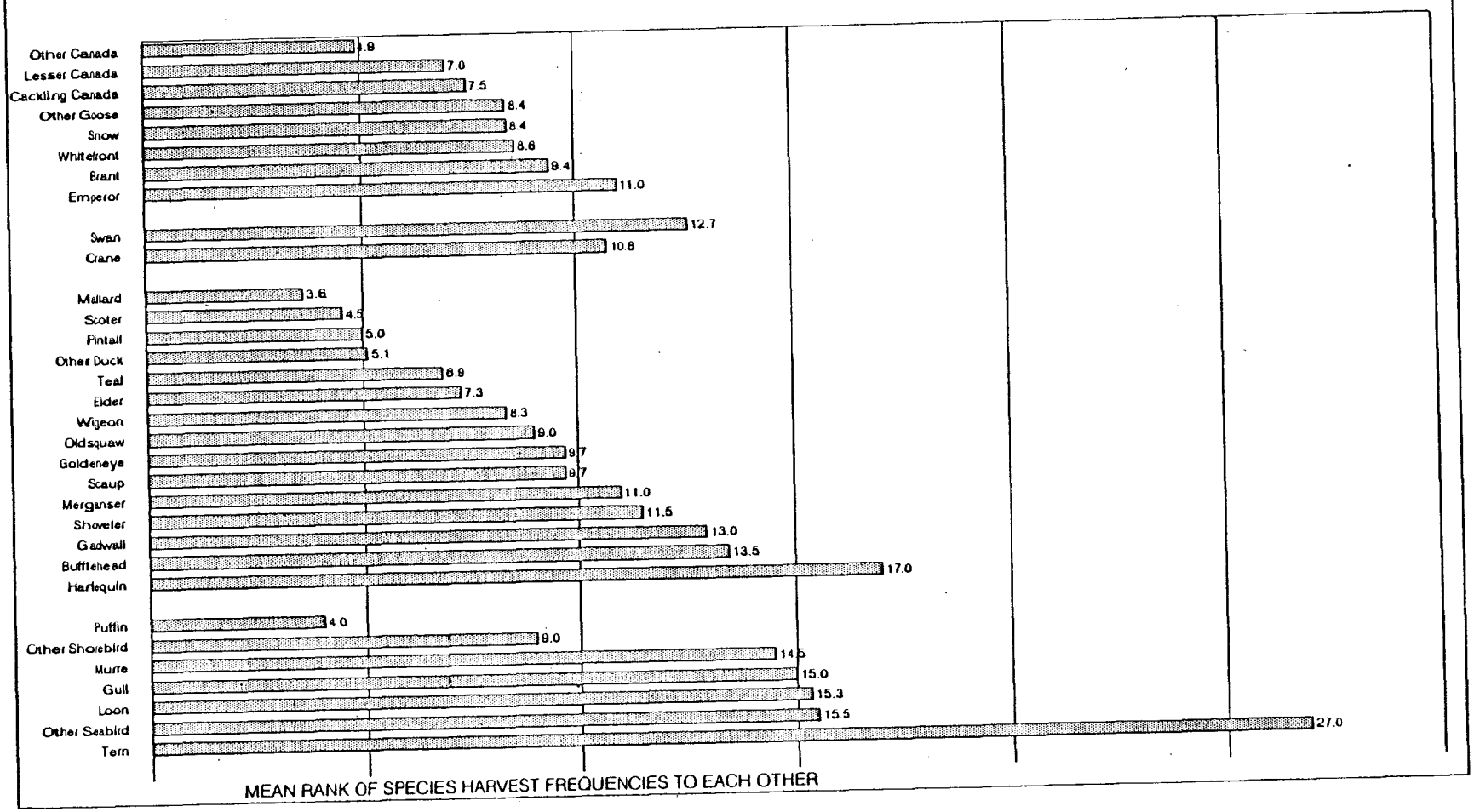
TABLE 15. SUBSISTENCE MIGRATORY BIRD HARVESTS BY SPECIES RANK ORDERED BY AREA

	SUBARCTIC AND ARCTIC COASTAL AREAS						SUBARCTIC INTERIOR AREAS			PACIFIC COASTAL AREAS			
(COMMUNITIES)	Alaska Peninsula (11)	Bristol Bay (5)	Yukon-Kuskokwim Delta [19]	Seward Peninsula Norton Sound (3)	North West Arctic [1]	Arctic Slope (5)	Upper Yukon Koyukuk [3]	Upper Tanana (6)	Copper River Basin (22)	Lower Kenai (2)	Prince William Sound (1)	Areas Using	Mean Rank Areas Using
GEESE													
Other Canada	6	5		3	2	5	4	6	8			8	4.9
Lesser Canada		7	7									7	7.0
Cackling Canada		4	11									2	7.5
Other Goose	16	10				4		8			4	5	8.4
Snow	19	11	6	5	4	8	6					7	8.4
Whitefront	14	8	10	8		2	5	12	10			8	8.6
Brant	8	13	20	1	3	3	18					7	9.4
Emperor	4	9	19	12								4	11.0
Swan and Crane													
Swan	18	14	4	13			14		13			6	12.7
Crane	10	12	17	7	10		12	11	7			8	10.8
Ducks													
Mallard	3	2	3	4	8	10	2	2	1	2	3	11	3.6
Scoter	11		2	11			1			1	1	6	4.5
Pintail	5	3	1	2	7	9	3	4	6	10		10	5.0
Other Duck	1	1		14	5	7	9	1	3			8	5.1
Teal	2		8	6			11	5	5	11		7	6.9
Eider	17	6	9	10	1	1				7		7	7.3
Wigeon	13		12				7	3	2	13		6	8.3
Oldsquaw			13		9	6	8					4	9.0
Goldeneye	7		16				15	10	12	3	5	7	9.7
Scaup	15		5	9			10	13	4	12		7	9.7
Merganser			21				16			5	2	4	11.0
Shoveler			15				13	7	11			4	11.5
Gadwall	12		14									2	13.0
Bufflehead			25				18	9	9	14	6	6	13.5
Harlequin			26				17			8		3	17.0

TABLE 15. SUBSISTENCE MIGRATORY BIRD HARVESTS BY SPECIES RANK ORDERED BY AREA

	SUBARCTIC AND ARCTIC COASTAL AREAS						SUBARCTIC INTERIOR AREAS			PACIFIC COASTAL AREAS			
(COMMUNITIES)	Alaska Peninsula (11)	Bristol Bay (5)	Yukon-Kuskokwim Delta [19]	Seward Peninsula Norton Sound (3)	North West Arctic [1]	Arctic Slope (5)	Upper Yukon Koyukuk [3]	Upper Tanana (6)	Copper River Basin (22)	Lower Kenai (2)	Prince William Sound (1)	Areas Using	Mean Rank Areas Using
Other Birds										4		1	4.0
Puffin										9		1	9.0
Other Shorebird												2	14.5
Murre			23		6					6		2	15.0
Gull			24							13		3	15.3
Loon			18	15								2	15.5
Other Seabird	9		22									1	27.0
Tern			27										
Geese Species	6	8	6	5	3	5	4	3	2	0	1		
Other Species	13	6	21	10	7	5	15	10	9	14	5		
Total Species	19	14	27	15	10	10	19	13	13	14	6		

FIGURE 28. SUBSISTENCE MIGRATORY BIRD HARVESTS RANK ORDERED BY SPECIES (MEAN RANK FOR RURAL AREAS REPORTING USING SPECIES, LOW NUMBER IS HIGHER RANK)



There is considerable variation between areas in the rank of species harvested (Table 15), and even more profound differences between particular communities (Appendix Table 6). For instance, scoter harvests are ranked first or second in the Upper Yukon-Koyukuk-Lower Tanana, Lower Kenai Peninsula, Prince William Sound, and Yukon-Kuskokwim Delta areas; ranked 11th in the Seward Peninsula-Norton Sound and Alaska Peninsula areas; and are missing altogether in five areas. Eider harvests are ranked first in the Northwest Arctic and Arctic Slope areas; moderately ranked in Bristol Bay (6th), Lower Kenai (7th), Yukon-Kuskokwim Delta (9th), Seward Peninsula-Norton Sound (10th), and Alaska Peninsula (10th); and missing from inland subarctic areas (Upper Yukon-Koyukuk-Lower Tanana, Upper Tanana, and Copper River Basin). Wigeon harvests are ranked high in the inland Copper River (2nd), Upper Tanana (3rd), Upper Yukon-Koyukuk-Lower Tanana (7th); moderately ranked in Yukon-Kuskokwim Delta (12th) and Alaska Peninsula (13th); and low or absent in the harvests in the other six areas. Brant harvests are ranked high in the Seward Peninsula-Norton Sound (1st) and Northwest Arctic and Arctic Slope (3rd); moderately ranked in the Alaska Peninsula (8th) and Yukon-Kuskokwim Delta (20th); and low or missing in other areas. Merganser harvests are ranked 2nd in Prince William Sound and 5th on the Lower Kenai Peninsula. Puffins ranked 4th on the Lower Kenai Peninsula, but are low or missing in harvests elsewhere.

Some of these differences between communities and areas are due to ecological factors. Overall, the appearance of particular species in the harvests for a particular community is related to the species' geographic distributions in the community's hunting territory. Its relative harvest rank also is probably related to relative abundance. However, some variation is undoubtedly due to sampling problems of single-year surveys, as discussed in the methodology section.

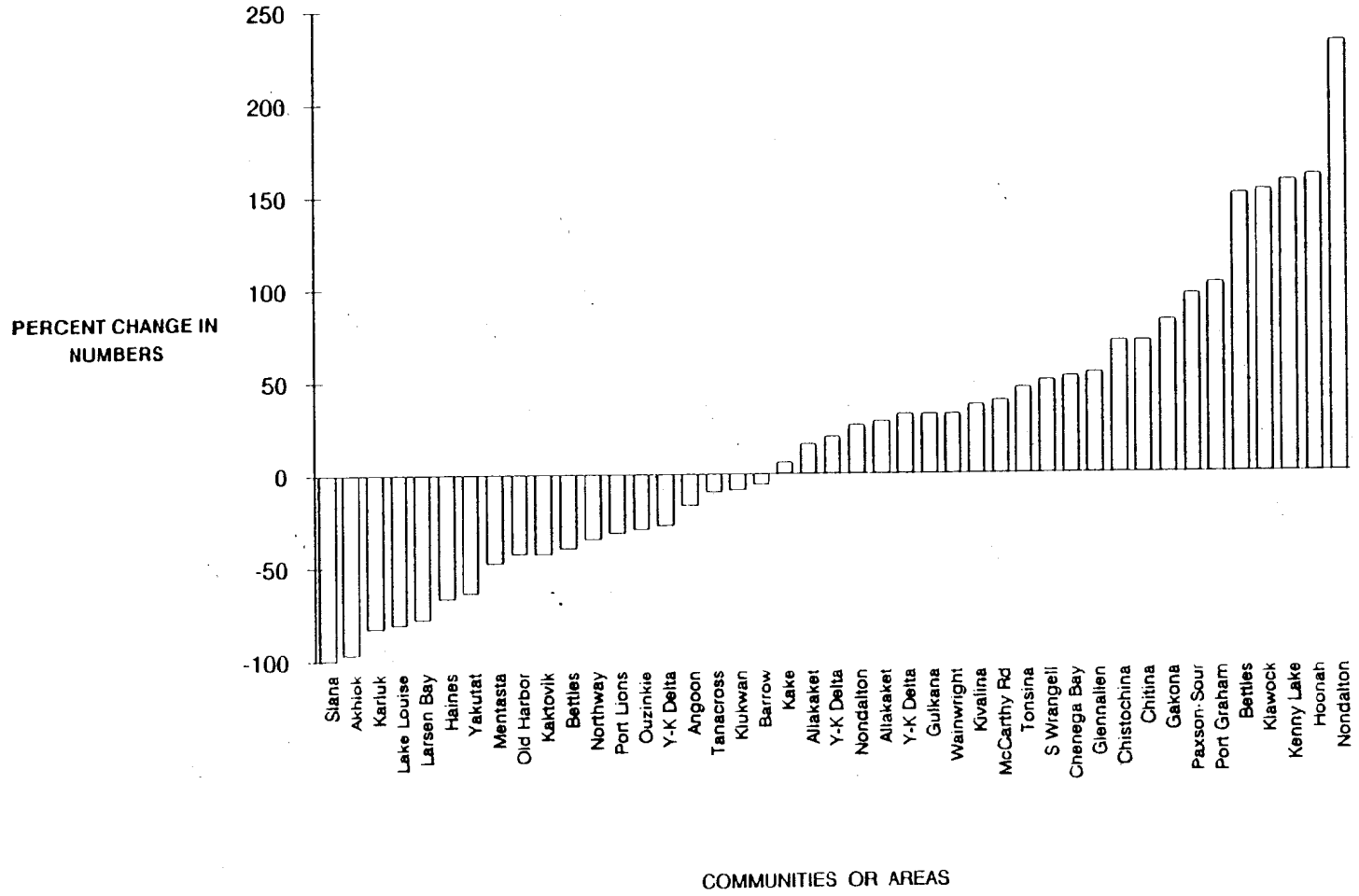
The most categories of birds (27 types of birds) were reported in the subsistence harvests in the Yukon-Kuskokwim Delta area, a major nesting and migration area for a variety of birds (Table 15). However, surveys in this region also made special efforts to identify species, so the greater number of species probably is related to this fact as well. In terms of the number of bird types reported, the Yukon-Kuskokwim Delta is followed by the Alaska Peninsula (19 types of birds), Upper Yukon-Koyukuk-Lower Tanana (19), Seward Peninsula-Norton Sound (15), Bristol Bay-Iliamna Lake (14), Lower Kenai Peninsula (14), Copper River Basin (13), Upper Tanana (13), Northwest Arctic (10), North Arctic Slope (10), and Prince William Sound (6) (Prince William Sound is represented by only a single community, which may lead to an incomplete list).

Mallard and pintail are the two species reported harvested in the most areas (11 areas and 10 areas respectively). Bird categories reported harvested in more than 50 percent of the 11 areas include mallard (11 areas); pintail (10 areas); "other Canada geese" (primarily large subspecies), white-fronted geese, crane, and "other duck" (8 areas); lesser snow geese, brant, teal, eider, goldeneye, and scaup (7 areas); and swan, scoter, wigeon, and bufflehead (6 areas).

Annual Variability of the Subsistence Harvest

In 39 communities or areas there are two years of harvest estimates, in 2 communities there are three years, and in one area (the Yukon-Kuskokwim Delta) there are four years of harvest estimates (Appendix Tables 25 and 26). These multi-year studies indicate that the reported size of a community's migratory bird harvest is commonly quite variable from one year to the next. For instance, of 47 year-to-year comparisons, only 7 showed a change of less than 25 percent, while 16 showed changes of 25-49 percent, 13 of 50-99 percent, 6 of 100-199 percent, and 5 of greater than 200 percent (Fig. 29). As examples of annual variability, in the Yukon-Kuskokwim Delta area subsistence bird harvest estimates have varied in this manner:

FIGURE 29. PERCENT CHANGE IN MIGRATORY BIRD HARVESTS BETWEEN YEARS FOR SELECT COMMUNITIES OR AREAS



20 percent increase from 1985 (59,926 birds) to 1986 (71,712 birds); 32 percent increase from 1986 to 1987 (94,588 birds); and 28 percent decrease from 1987 to 1989 (68,550 birds). In the community of Allakaket, harvests varied in this manner: 16 percent increase from 1982 (1,396 birds) to 1983 (1,616 birds) and a 28 percent increase from 1983 to 1984 (2,075 birds). Some between-year differences are large, such as Hoonah, where harvests increased 161 percent from 1985 (253 birds) to 1987 (659 birds) or Klawock where harvests increased 152 percent from 1984 (113 birds) to 1987 (285 birds). Some differences are exceptional, such as a 2,333 percent increase in Tenakee Springs from 1984 (6 birds) to 1987 (146 birds).

The annual variability in bird harvests may be due in part to sampling differences between survey years. Substantial differences in total estimated community harvest levels can result if a few highly productive hunters in a community are over-represented or under-represented in the random draw on particular years. Because of the small community sizes, the lack of information from just a few households can make marked differences in expanded community estimates.

Probably as important are ecological factors affecting the abundance and accessibility of migratory birds between years, discussed above. Migratory birds appear to be a particularly variable resource from year to year for a variety of reasons: the short harvest window for communities; changes in migration paths that may hit or miss a community's hunting area; weather conditions affecting hunting success; travel conditions during spring thaw affecting bird accessibility; and the dynamics of competing subsistence and economic opportunities. In addition, longer-term trends in species abundance and distribution effect between-year harvest patterns. As stated above, because of the potential for large between-year variation in subsistence bird harvests, one must exercise caution in using a single-year's harvest to depict subsistence uses for a community or region. A series of study years is required to adequately assess the range of variation and trends in subsistence bird use patterns.

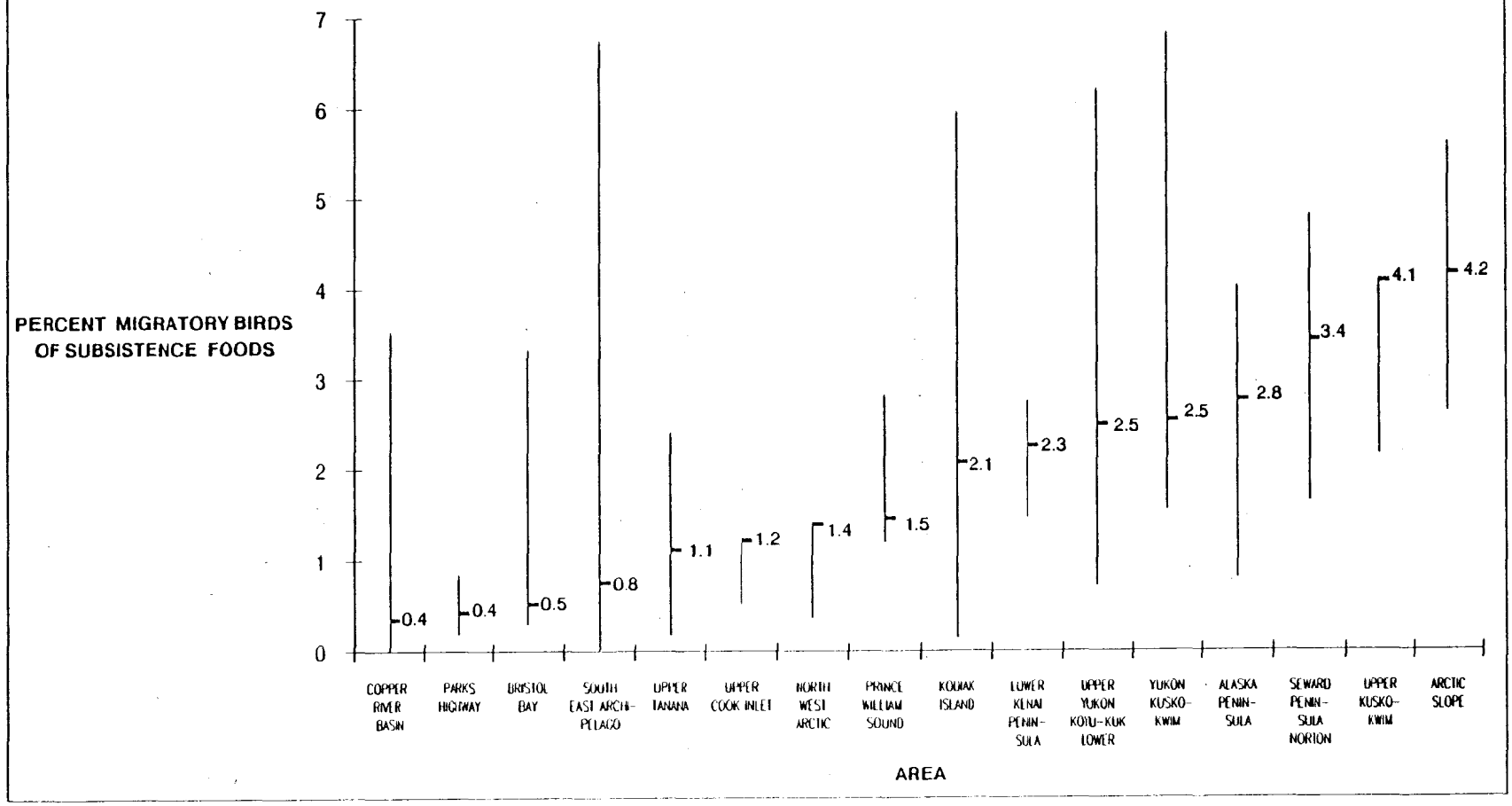
Contribution of Waterfowl to the Subsistence Food Harvest

In most rural areas, fishing and hunting are major components of the regional economy (Wolfe and Walker 1987). Most rural Alaska communities which are predominantly Alaska Native are supported by a traditional "mixed, subsistence-market" economy. A substantial portion of the community's food supply is obtained by fishing and hunting by extended family groups. Families use monetary income to purchase equipment for efficient food harvesting and processing, such as snowmachines, boats and outboard motors, fishing nets, and rifles. The wild foods are distributed throughout the community along non-commercial channels, primarily defined by kinship lines. This type of traditional economic system falls within the general class termed a "domestic mode of production" (Sahlins 1972; Usher 1982).

Migratory birds are one of the types of wild foods produced within Alaska's traditional mixed economy. The relative contribution of migratory birds by food weight is shown in Fig. 30, calculated by dividing a community's mean annual bird harvest by a community's mean total subsistence harvest (pounds usable weight), for 142 communities where this information is available (Appendix Table 4). As shown in Fig. 30, in most communities migratory birds comprise less than 5 percent by weight of the annual subsistence food harvest. Regional median community values range from 0.4 percent (Copper River Basin and Parks Highway areas) to 4.2 percent (Arctic Slope area). Migratory birds comprise more than 5 percent of the total food harvest in only 8 of the 142 communities, and no surveyed communities exceeded 7 percent.

The relative contribution of different wild species to a community's diet is a complex function of customary food preferences and food production efficiencies (which in turn are

FIGURE 30. NUTRITIONAL CONTRIBUTION OF MIGRATORY BIRDS TO SUBSISTENCE DIET, RANGE AND MEDIAN COMMUNITIES BY AREA



related to cultural, ecological, and technological variables). In terms of food preferences, migratory birds tend to be a highly valued food item. Birds are especially valued in Alaska's subarctic and arctic areas during spring migrations, when they may be among the first sources of fresh meat available to a community after a winter's diet of preserved foods (such as dried and frozen fish). Because of their high value as food items, families are willing to expend considerable time and effort to harvest them at that time. In terms of food production efficiencies, migratory birds tend to be one of the more expensive wild foods to produce (monetary and labor cost per unit food) (cf. Wolfe 1979:240). The higher "price" to produce wild birds relative to other subsistence foods indicates its high cultural value to rural consumers.

The relatively high cost-to-return ratio in harvesting migratory birds is one reason for the relatively small volume of birds used in comparison with other wild food species. In general, wild fish and big game animals provide more returns to a family's labor and capital. Consequently, these types of wild foods are harvested in larger amounts. As a state-wide estimate, the rural subsistence diet is 58.8 percent fish, 18.3 percent land mammals, 14.9 percent marine mammals, and the remainder shellfish, wild plants, and birds (Wolfe and Walker 1987; Wolfe and Bosworth 1990). In practice, pursuits other than bird hunting absorb most of a family's time when birds are available for harvest. In many regions, fishing for subsistence use and commercial sale are the major economic endeavors during late spring, summer, and fall. During fall, hunting for moose, caribou, or seal are major pursuits in many regions.

SUMMARY AND DISCUSSION

The statewide analysis of available information presented above provides a detailed picture of the subsistence uses of migratory birds in Alaska during the recent decade. The analysis provides information for developing answers to several general questions relating to the "what", "who", "when", and "how" of subsistence bird use in Alaska, of importance to the federal-state resource management systems. A summary of the analysis is presented below, organized under these general questions.

What is the Magnitude of the Subsistence Bird Harvest?

Extrapolated from surveys conducted in 151 communities (cf., Table 3), approximately 307,000 birds were harvested annually in rural Alaska areas during the late 1980s, including about 79,700 geese, 210,500 ducks, 5,300 cranes, 6,900 tundra swans, and 5,000 "other" migratory birds (primarily seabirds, such as murres, gulls, cormorants, and puffins) (cf., Table 7). Approximately 83,600 eggs were harvested annually in rural Alaska areas, of which about 68.6 percent were gull eggs, 2.0 percent were geese eggs, 13.6 percent were duck eggs, and 15.8 percent "other" eggs for reporting areas (cf., Table 8).

The subsistence bird harvest provided about 762,000 lbs of food to rural areas annually (including about 13,000 lbs of eggs), or about 7 lbs of food per rural resident (2.8 birds per rural resident). Generally, migratory birds comprised from 1 to 4 percent of a rural community's annual wild food harvests by weight.

In Alaska, the rural subsistence harvest of migratory birds was about five times the size of the non-rural harvest, which was estimated to total about 56,122 birds in 1988-89 extrapolated from sampled state duck stamp purchasers from non-rural areas. The rural

subsistence bird harvest comprised about 84.6 percent of the total Alaska bird harvest while the non-rural harvest was 15.4 percent (Fig. 3). Broken out by categories of migratory birds, the rural subsistence harvest accounted for about 94.1 percent of the geese, 81.0 percent of the ducks, 88.7 percent of the cranes, all of the swans, and 80.5 percent of "other migratory birds" (Fig. 4).

Annual variation in subsistence bird harvests of particular communities is substantial, commonly between 25-100 percent based on comparisons of 47 multi-year harvest surveys. An estimate of the low and high ranges of the annual subsistence bird harvest cannot be determined from the current literature. Bias in the subsistence harvest estimate, where it exists, is probably in the direction of under-reporting harvests. To the extent that future rule-making requires precise specific measures (such as for establishing species harvest guidelines or appropriate season opening dates for particular communities), more detailed information must be developed through additional cooperative programs between agencies and user groups.

Who Harvests Birds for Subsistence Uses?

In Alaska, subsistence harvests of migratory birds primarily occur in rural areas where fishing and hunting are major components of the regional economy (Wolfe and Walker 1987). In 1985, there were about 256 rural Alaska communities containing about 110,100 people of whom 48.1 percent were Alaska Native (Table 1, Appendix Table 27). Rural Alaska communities tend to be small (most have less than 1,000 people each) and geographically dispersed (Fig. 1). Most rural communities are supported by a traditional "mixed, subsistence-market" economy, where families support themselves by a combination of wage employment, commercial fishing or fur trapping, and subsistence food harvests (Wolfe and Walker 1987). Harvesting migratory birds is one type of traditional subsistence activity for producing wild foods.

The approximately 307,000 birds harvested annually in rural Alaska were distributed among the following areas: Yukon-Kuskokwim Delta (91,200 birds), the Yukon-Koyukuk-Lower Tanana area (60,900 birds), Seward Peninsula-Norton Sound area (41,200 birds), the rural Southeast (26,000 birds), the Arctic Slope (16,600 birds), the Alaska Peninsula (16,500 birds), Northwest Arctic (13,200 birds), Kodiak Island (12,300 birds), Bristol Bay-Iliamna Lake (11,000 birds), Upper Kuskokwim (6,500 birds), Upper Tanana (4,700 birds), rural Prince William Sound (3,000 birds), and other rural areas (4,200 birds) (cf., Table 7). The approximately 84,000 eggs harvested annually in rural Alaska were distributed among the following areas: Alaska Peninsula (18,000 eggs), Arctic Slope (14,200 eggs), Seward Peninsula-Norton Sound (14,000 eggs), Northwest Arctic (13,400 eggs), Bristol Bay-Iliamna Lake (9,300 eggs), Kodiak Island (5,700 eggs), Yukon-Kuskokwim Delta (3,800 eggs), rural Southeast (2,800 eggs), and rural Prince William Sound (1,900 eggs) (cf., Table 8).

While migratory birds were harvested in all rural areas, mean harvest levels varied substantially between communities and areas. Mean per capita harvests of migratory birds were statistically higher in areas whose populations contained larger proportions of Alaska Natives (cf., Fig. 19). The three top ranked areas in terms of per capita bird harvests were the primarily Athabaskan Indian communities of the Yukon-Koyukuk-Lower Tanana area (19.1 lbs of birds per person, or 8.2 birds per person); the Inupiat-Yup'ik Eskimo communities of the Seward Peninsula-Norton Sound Area (18.1 lbs of birds per person, or 6.2 birds per person); and the Yup'ik Eskimo communities of the Yukon-Kuskokwim Delta (16.1 lbs of birds per person, or 5.3 birds per person). The largest subsistence migratory bird egg harvests occurred in the Alutiiq communities of the Alaska Peninsula (5.1 eggs per person).

It is common to find from 60-80 percent of community households harvesting migratory birds in communities of the Yukon-Kuskokwim Delta, Arctic Slope, Alaska Peninsula, Bristol Bay, Kodiak Island, Seward Peninsula, and Upper Yukon-Koyukuk-Lower Tanana areas (cf., Fig. 21). Household participation rates and per capita bird harvests are substantially lower in other rural areas where the majority of the population is from Euro-American cultural traditions, including rural Southeast, the Copper Basin, and the Parks Highway areas. The proportion of community households using birds is higher than the proportion of households harvesting birds in most areas, due to the non-commercial sharing of birds between households (cf., Table 12, Figs. 20-24). A conservative estimate of about 12,000 hunters annually harvest migratory birds in Alaska's rural areas, if one assumes one hunter in each household that reported taking migratory birds in surveyed communities. However, systematic counts of bird hunters in rural areas have never been made, and the actual number of hunters is probably somewhat higher than this minimum estimate.

What Bird Species Are Used for Subsistence?

At least 32 types of birds have been documented as used for subsistence purposes in rural Alaska communities (cf., Table 15, Fig. 28). However, the precise species composition for the rural harvest has not been determined by current harvest survey methods. The five most commonly harvested types of birds as determined by their mean rank order for reporting areas were mallard, scoter, "other Canada" (primarily large subspecies), pintail, and teal (cf., Table 15, Fig. 28). Other geese species used include cackling Canada geese, snow geese, white-front geese, black brant, and emperor geese. Other duck species used include the eider, wigeon, oldsquaw, goldeneye, scaup, merganser, shoveler, gadwall, bufflehead, and harlequin. Other birds taken for subsistence include tundra swan, sandhill crane, puffin, murre, loon, gull, and tern.

Information on the subsistence harvests of particular species is particularly uneven in the literature. There is not sufficient detailed information to make statewide harvest estimates at the species level. Species information has been gathered only for a limited number of communities and years. In this area, much basic research remains to be conducted.

When Do Subsistence Harvests Occur?

For most rural communities, bird harvests occur during traditional seasons which are timed in accordance with the availability of birds in traditional harvest territories, rather than current federal-state hunting seasons. Based on general seasonal round data for 122 communities (Figs. 25 and 26), there appear to be four distinct seasonal patterns of subsistence bird hunting in Alaska, characteristic of the areas identified below:

Sept-Dec	**Select Rural Areas**: Southeast Archipelago, Cordova, Copper Basin, Parks Highway, and perhaps the Upper Tanana
Sept-May	**Pacific-Aleutian Rural Areas**: Tatitlek, Chenega Bay, Port Graham, English Bay, Kodiak Island Villages, South Alaska Peninsula, St. Paul, St. George, Aleutian Islands

Apr-early June; mid Aug-Oct **Subarctic Coast and Interior Rural Areas:** North Alaska Peninsula, Bristol Bay-Iliamna Lake, Yukon-Kuskokwim Delta, South Norton Sound, Tyonek-Skwentna, Upper Kuskokwim, Yukon-Koyukuk, Lower Tanana, and perhaps the Upper Tanana; plus Yakutat

Apr-Oct **Arctic Rural Areas:** Seward Peninsula-Bering Strait, Northwest Arctic, Arctic Slope

For the areas named above, subsistence bird hunting generally occurs during the indicated periods for most communities. Seasonal information (Figs. 25 and 26) indicates that some subsistence hunting occurs outside these general periods. But by and large, the seasons depicted above appear to be the most usual hunting periods for rural communities of each area.

Seasonal harvest information is not complete for most rural communities. In particular, the number of birds taken by seasonal period has not been adequately documented to precisely indicate the relative productivity of the traditional hunting periods. Based on reporting areas, it is estimated that about 51.4 percent of the rural bird harvest (157,800 birds) was taken during the "spring-early summer" period, 4.4 percent (13,400 birds) during the "mid-summer" period, and 44.3 percent (136,000 birds) during the "late summer-fall-winter" period (Tables 13-14). However, it is difficult to estimate harvest levels for even broad seasonal periods from survey sources. Further seasonal information may indicate that certain areas (such as the Upper Tanana region) are appropriately part of other seasonal groupings.

How Are Subsistence Harvests Done?

Based on surveyed communities, subsistence harvests are guided by the rules of local custom and tradition, as well as by the regulations of the federal and state resource management system. Harvesters generally follow customary and traditional rules particular to their local group. Harvests typically occur in traditional territories surrounding the community. Subsistence bird hunters generally use efficient means and methods, including guns, snowmachines, boats, and other ground transportation, but generally not aircraft. In general, subsistence hunters take birds to feed a larger family group, often including several households. There has been little documentation of the local customary and traditional rules guiding subsistence bird use. Documenting indigenous resource management systems and traditional ecological knowledge are fruitful areas for future cooperative work between local communities and federal-state researchers (cf., Nakashima 1990).

Subsistence Harvests and the International Bird Management System

The traditional subsistence uses of birds in Alaska occur alongside the uses of migratory birds by other social groups in Canada, the United States, Mexico, the Soviet Union, and Japan. Because migratory birds range across state, provincial, and national boundaries, the actions of each group have collective effects on bird populations and established uses of birds. Only a cooperative, conservation system on an international scale can incorporate the uses of this diversity of social groups.

Due to treaties which prohibit the taking of birds and eggs during traditional spring periods, much of the subsistence harvest of migratory birds in Alaska remains outside the international wildlife management system. To bring this traditional use into the migratory bird management system will require innovative restructuring of current management regimes.

Amending the 1916 international treaty to recognize subsistence uses is a first step, but probably will not by itself result in the inclusion of indigenous northern groups into the bird management system. Inclusion of indigenous groups probably will not be successful unless the bird management system adopts additional management goals, management methods, and institutional structures. For user groups to voluntarily participate in a resource management system, they must feel that the system benefits wildlife populations and protects their cultural uses of wildlife.

Developing one or more "Subsistence Migratory Bird Committees" with representation from different subsistence regions might be a useful step toward bringing subsistence users into the international bird management system. Such an institution might build on the model provided by the Waterfowl Conservation Committee of the Association of Village Council Presidents, which was formed by federal, state, and village governments to help bring subsistence users of the Yukon-Kuskokwim Delta region into a cooperative bird management system (Pamplin 1985). However, to be representative of all subsistence uses in Alaska, representation would have to come from a number of subsistence use areas with relatively distinct use patterns, such as the rural Southeast, Aleutian-Pacific area, Yukon-Kuskokwim Delta, rural Interior area, Seward Peninsula-Bering Strait, Northwest Alaska, Arctic Alaska, St. Lawrence Island, and the Pribilof Islands. The incorporation of subsistence interests will be difficult even with such an institutional innovation. Traditional authority over subsistence tends to be dispersed among a myriad of elders, heads of kinship groups, and other tribal governmental organizations at the local or regional levels. The many customs and traditions which guide subsistence harvest practices have evolved over time within these local structures. Finding ways to bring local subsistence authorities within the regulatory framework of the federal-state resource management system presents difficult institutional challenges.

Without addressing all these issues (international treaties, management goals, management practices, and institutional structures), the international bird management system may find that traditional practices of northern groups are not fully integrated into the management framework. However, if the international bird management system works to find ways to include northern subsistence users and their cultural practices, then the system may be better able to deal with subsistence bird hunting. How these issues are addressed may determine whether traditional subsistence hunting, one of the major uses of migratory birds in North America, finds a place inside or outside international bird management.

REFERENCES

Alaska Department of Fish and Game
1985 Alaska Habitat Management Guide Southcentral Region Volume II: Human Use of Fish and Game. Division of Habitat, Juneau.

_____ 1985 Alaska Habitat Management Guide Southwest Region Volume II: Human Use of Fish and Game. Division of Habitat, Juneau.

_____ 1985 Alaska Habitat Management Guide Arctic Region Volume II: Human Use of Fish and Game. Division of Habitat, Juneau.

_____ 1986 Alaska Habitat Management Guide Western and Interior Regions, Distribution, Abundance, and Human Use of Fish and Wildlife. Division of Habitat, Juneau.

_____ 1986 Alaska Habitat Management Guide Life Histories and Habitat Requirements of Fish and Wildlife. Division of Habitat, Juneau.

_____ 1986 Alaska Habitat Management Guide Impacts of Land and Water Use on Wildlife and their Habitat and on Human Use of Fish and Wildlife. Division of Habitat, Juneau.

_____ 1986 Alaska Habitat Management Guide Economic Overview Fish and Wildlife, Volume II Hunting, Trapping, Nonconsumptive Use and Subsistence and Other Local Use. Division of Habitat, Juneau.

_____ 1989 Community Profile Database, Division of Subsistence, Juneau

Alaska Department of Labor
1987 Alaska Population Overview, 1985 Estimates. Division of Administrative Services, Research & Analysis. Juneau

Andrews, Elizabeth F.
1988 The Harvest of Fish and Wildlife for Subsistence by Residents of Minto, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 137.

Andrews, Elizabeth and Raymond Peterson
1983 Wild Resource Use of the Tuluksak River Drainage by Residents of Tuluksak, 1980-1983. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 87

Bartonek, James C.
1991 1991 Pacific Flyway Briefing Material; Waterfowl Harvests and Status, Hunter Participation and Success, and Certain Hunting Regulations in the Pacific Flyway and Elsewhere. U.S. Fish and Wildlife Service, Portland, Oregon.

Berkes, Fikret
1982 Waterfowl Management and Northern Native Peoples With Reference to Cree Hunters of James Bay. In Muskox 30:23-35.

Berkes, Fikret, Peter George, and Richard Preston
1991 Co-management. The Evolution in Theory and Practice of the Joint Administration of Living Resources. Alternatives 18(2):12-18.

Blanchard, Kathleen A.
1984 Seabird Harvest and the Importance of Education in Seabird Management on the North Shore of the Gulf of St. Lawrence. Doctoral Thesis, Cornell University

Braund, S.R. & Associates
1983 Red Dog Mining Project: Kivalina and Noatak Subsistence Use Patterns. Submitted to Cominco Alaska.

Braund, S.R. & Associates and Institute of Social & Economic Research
1988 North Slope Subsistence Study: Barrow 1987. Prepared for U.S. Department of the Interior, Minerals Management Service, Alaska OCS Region, Technical Report No. 133.

1989a North Slope Subsistence Study: Barrow 1988. Prepared for U.S. Department of the Interior, Minerals Management Service, Alaska OCS Region. Technical Report No. 135. (OCS Study/MMS 89-0077)

1989b North Slope Subsistence Study: Wainwright 1988. Prepared for U.S. Department of the Interior, Minerals Management Service, Alaska OCS Region, Technical Report No. 136. (OCS Study/MMS 89-0078)

Burch, Ernest S., Jr.
1985 Subsistence Production in Kivalina, Alaska: A Twenty-Year Perspective. Division of Subsistence, Alaska Department of Fish and Game. Technical Paper No. 128.

Case, David S.
1984 Alaska Natives and American Laws. University of Alaska Press.

Case, Martha
1986 Wild Resource Use in Northway, Alaska. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 132.

Case, Martha and Libby Halpin
1990 Contemporary Wild Resource Use Patterns in Tanana, Alaska, 1987. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 178.

Caulfield, Richard A.
1984 Subsistence Land Use in the Upper Yukon-Porcupine Region, Alaska. Division of Subsistence, Alaska Department of Fish and Game. Technical Paper No. 16.

Charnley, Susan
1984 Human Ecology of Two Central Kuskokwim Communities: Chuathbaluk and Sleetmute. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 81.

Coffing, Michael
1988 Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and use, and the Subsistence Economy of a Lower Kuskokwim River Area Community. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 157.

Cohen, Kathryn A.
1989 A Comprehensive Study of Wild Resource harvest and Use by Residents of Wrangell, Alaska. Division of Subsistence, Alaska Department of Fish and Game. Technical Paper No. 165.

Conger, Annie Olanna and James Magdanz
1990 The Harvest of Fish and Wildlife in Three Alaska Communities: Brevig Mission, Golovin, and Shishmaref, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 188.

Copp, John D.
1984 Draft Critique and Analysis of Eskimo Waterfowl Hunter Surveys Conducted by the U.S. Fish and Wildlife Service on the Yukon-Kuskokwim Delta, Alaska, 1980-1984. U.S. Fish and Wildlife Service, Anchorage, Alaska.

_____.
1988 Results of the 1987 Survey of Waterfowl Hunting on the Yukon-Kuskokwim Delta, Alaska. U.S. Fish and Wildlife Service, Anchorage, Alaska.

Copp, John D. and Brian J. McCaffery
1987 Results of the 1986 Survey of Waterfowl Hunting on the Yukon-Kuskokwim Delta, Alaska. Oregon State University and U.S. Fish and Wildlife Service

Copp, John D. and Gloria M. Roy
1986 Results of the 1985 Survey of Waterfowl Hunting on the Yukon-Kuskokwim Delta, Alaska. Oregon State University. Prepared for the U.S. Fish and Wildlife Service.

Ellanna, Linda J.
1983 Bering Strait Insular Eskimo: A Diachronic Study of Economy and Population Structure, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 77.

Ellanna, Linda J. and George K. Sherrod
1986 Timber Management and Fish and Wildlife Utilization in Selected Southeast Alaska Communities: Klawock, Prince of Wales Island, Alaska. Technical Paper No. 126.

Fall, James A. and Judith M. Morris
1988 Fish and Wildlife Harvests in Pilot Point, Ugashik, and Port Heiden, Alaska Peninsula, Southwest Alaska, 1986-1987. Division of Subsistence, Alaska Department of Fish and Game, Technical paper No. 158.

Fall, James A., Daniel J. Foster, and Ronald T. Stanek
1983 Use of Moose and other Wild Resources in the Tyonek and Upper Yentna Areas: A Background Report, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 74.

_____.
1984 The Use of Fish and Wildlife Resources in Tyonek, Alaska. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No, 105.

Fall, James A. and Janet Schichnes
1990 Unpublished data on Subsistence Harvest of Resources by Residents of Nushagak River Communities, Division of Subsistence, Alaska Department of Fish and Game.

Fall, James A., Janet Schichnes, Molly Chythlook, and Robert J. Walker
1986 Patterns of Wild Resource Use in Dillingham: Hunting and Fishing in an Alaskan Regional Center. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 135.

Firman, Anne S. and Robert B. Bosworth
1990 Harvest and Use of Fish and Wildlife by Residents of Kake, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Draft Technical Paper No. 145.

Foster, Dan J.
1982 The Utilization of King Salmon and the Annual Round of Resource Uses in Tyonek, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 27.

Gambell, Ken
1990 Waterfowl Harvest and Population Survey Data. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C.

George, Gabriel D. and Robert G. Bosworth
1988 Use of Fish and Wildlife by Residents of Angoon, Admiralty Island, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 159.

Georgette, Susan and Hannah Loon
1992 Subsistence Use of Fish and Wildlife in Kotzebue, A Northwest Alaska Regional Center, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 167.

Gmelch, George, Sharon Gmelch and Richard Nelson
1983 Sitka: Resource Use in a Small Alaskan City, Division of Subsistence, Alaska Department of Fish and Game, Technical paper No. 90.

Gottesman, Dan
1983 Native Hunting and the Migratory Birds Convention Act: Historical, Political and Ideological Perspectives. In Journal of Canadian Studies 18(3): 67-89.

Halpin, Libby
1987 Living Off the Land: Contemporary Subsistence in Tetlin, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 149.

Haynes, Terry L, Martha Case, James A. Fall, Libby Halpin, and Michelle Robert
1984 The Use of Copper River Salmon and Other Wild Resources by Upper Tanana Communities, 1983-1984, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 115.

Jacobsen, Michael J. and Cynthia Wentworth
1982 Kaktovik Subsistence: Land Use Values through Time in the Arctic National Wildlife Refuge Area, Northern Alaska Ecological Services, U.S. Fish and Wildlife Service, NAES 82-01.

Kari, Priscilla Russell
1983 Land Use and Economy of Lime Village, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 80.

Kari, Priscilla Russell
1985 Wild Resource Use and Economy of Stony River Village. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 138.

Klein, David R.
1966 Waterfowl in the Economy of the Eskimos on the Yukon-Kuskokwim Delta, Alaska. In Arctic 19(4): 319-336.

Kodiak Area Native Association
1983 Kodiak Island Area Local Fish and Game Resource Guide. Prepared by KANA with assistance from the Division of Subsistence, Alaska Department of Fish and Game.

Kookesh, Matt and Ken Leghorn
1986 Timber Management and Fish and Wildlife Utilization in Tenakee Springs, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No.138.

Little, Ronald L. and Lynn A. Robbins
1984 Effects of Renewable Resource Harvest Disruptions on Socioeconomic and Sociocultural Systems: St. Lawrence Island, John Muir Institute and U.S. Department of the Interior, OCS Minerals Management Service, Anchorage, Technical Report No. 89 (Contract No. AA851-CT1-59)

Loranger, Andy
1985 Draft Historical and Contemporary Subsistence Harvest of Migratory Birds in Alaska. U.S. Fish and Wildlife Service, U.S. Department of the Interior.

Marcotte, James R.
1990 Unpublished Fish and Game Harvest and Use in Parks Highway communities, Division of Subsistence, Alaska Department of Fish and Game.

———.
1990 Subsistence Harvest of Fish and Wildlife By Residents of Galena, Alaska, 1985-86, Division of Subsistence, Alaska Department of Fish and Game, Technical paper No. 155.

———.
1986 Natural Resource Use Patterns in Huslia, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 133.

Marcotte, James R. and Terry L. Haynes
1985 Contemporary Resource Use in the Upper Koyukuk Region, Alaska. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 93.

Marcotte, James R., Priscilla Wheeler, and Clarence Alexander
1992 Fish and Game Use by Residents of Fiver Upper Tanana Communities, 1987-88. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 168.

Martin, A. Gayle
1983 Use of Natural Resources by the Residents of Dot Lake, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 19.

McGee, Rebecca, Ervin McIntosh and B.J. Strong
1984 Progress Report 1983. Resource Harvest by Local Residents of the Upper Koyukuk Region. Kanuti National Wildlife Refuge, U.S. Fish and Wildlife Service, Department of the Interior, August 1984

Mills, David and Anne S. Firman
1986 Fish and Wildlife Use of Yakutat, Alaska: Contemporary Patterns and Changes, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 131

Morris, Judith M.
1985 The Use of Fish and Wildlife Resources by Residents of the Bristol Bay Borough, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 136.

_____ 1986 Subsistence Production and Exchange in the Iliamna Lake Region, Southwest Alaska. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 136.

_____ 1987 Fish and Wildlife Uses in Six Alaska Peninsula Communities: Egegik, Chignik, Chignik Lagoon, Chignik Lake, Perryville, and Ivanof Bay, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 151.

Nakashima, Douglas
1990 Application of Native Knowledge in EIA: Inuit, Eiders and Hudson Bay Oil. Canadian Environmental Assessment Research Council, Quebec.

Nelson, Richard K., Kathleen H. Mautner, and G. Ray Bane
1982 Tracks in the Wildland. A Portrayal of Koyukon and Nunamiut Subsistence. Anthropology and Historic Preservation, Cooperative Parks Study Unit, University of Alaska, Fairbanks.

Pamplin, W. Lewis, Jr.
1985 Cooperative Efforts to Halt Population Declines of Geese Nesting on Alaska's Yukon-Kuskokwim Delta. Paper presented at the 51st North American Wildlife and Natural Resources Conference. Transactions: 487-506.

Pedersen, Sverre
1992a December Land-Use Mapping Update and February 1988 Resource Harvest Survey in Point Lay, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 171.

_____ 1992b Nuiqsut Land and Resource Use Baseline With Initial Emphasis on Land Use Mapping. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 170.

_____ 1990 Unpublished Data for Kaktovik, Division of Subsistence, Alaska Department of Fish and Game, Alaska Department of Fish and Game.

Prevett, J.P., H.G. Lumsden and F.C. Johnson
1983 Waterfowl Kill by Cree Hunters of the Hudson Bay Lowland, Ontario. In Arctic 36(2):185-192.

Reed, Carolyn E.
1985 The Role of Wild Resource Use in Communities of the Central Kenai Peninsula and Kachemak Bay, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 106.

Sahlins, Marshall
1972 Stone Age Economics, Chicago: Aldine Atherton, Inc.

Schichnes, Janet C. and Molly B. Chythlook
1988 Wild Resource Use in Manokotak, Southwest Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 152.

Schroeder, Robert F., David B. Anderson, Rob Bosworth, Judith M. Morris and John M. Wright
1987 Subsistence in Alaska: Arctic, Interior, Southcentral, Southwest and Western Regional Summaries, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 150.

Schroeder, Robert F. and Matthew Kookesh
1990 Subsistence Harvest and Use of Fish and Wildlife Resources by Residents of Hoonah, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical paper No. 142.

Scott, Colin H.
1987 The Socio-economic Significance of Waterfowl Among Canada's Aboriginal Cree: Native Use and Local Management. Paper presented at a workshop "The Value of Birds" during the 19th World Conference of the International Council for Bird Preservation, June 1986 at Queen's University, Kingston, Ontario (ICBP Technical Publication No. 6)

Shinkwin, Anne and Martha Case
1984 Modern Foragers: Wild Resource Use in Nenana Village, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 91.

Sobelman, Sandra S.
1985 The Economics of Wild Resource Use in Shishmaref, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 112.

Stanek, Ronald T.
1990 Unpublished Subsistence Harvests at False Pass and Nelson Lagoon, Alaska, Division of Subsistence, Alaska Department of Fish and Game

_____.
1985 Patterns of Wild Resource Use in English Bay and Port Graham, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 104.

_____.
1987 Historical and Contemporary Trapping in the Western Susitna Basin, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 134.

Stanek, Ronald T., Dan J. Foster and James A. Fall
1988 The Harvest and Use of Fish, Game and Plant Resources by the Residents of Chase, Gold Creek-Chulitna, and Hurricane-Broad Pass, Southcentral Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 161.

Stickney, Alice
1984 Coastal Ecology and Wild Resource Use in Central Bering Sea - Hooper Bay and Kwigillingok, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 85.

Stokes, Jeff W.
1984 Natural Resource Utilization of Four Upper Kuskokwim Communities, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 86.

Stratton, Lee
1989 Resource Uses in Cordova, A Coastal Community of Southcentral Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 153.

Stratton, Lee
1990 Resource Harvest and Use in Tatitlek, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 181.

Stratton, Lee and Evelyn B. Chisum
1986 Resource Use Patterns in Chenega, Western Prince William Sound: Chenega in the 1960s and Chenega Bay 1984-1986. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 139.

Stratton, Lee and Susan Georgette
1984 Use of Fish and Game by Communities in the Copper River Basin, Alaska: A Report on a 1983 Household Survey, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 107.

Stratton, Lee and James A. Fall
1990 Unpublished Use of Fish and Game by Communities in the Copper River Basin, Alaska, 1987 Survey. Division of Subsistence, Alaska Department of Fish and Game.

Strong, B.J. and Ervin W. McIntosh
1985 Progress Report: Resource Harvest by Local Residents of the Upper Koyukuk Region in 1984. Kanuti National Wildlife Refuge, U.S. Fish and Wildlife Service, Department of the Interior, August 1985.

Sumida, Valerie and Clarence Alexander
1988 Land and Resource Use Patterns in the Yukon Flats: Stevens Village, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 129.

_____
1989 Patterns of Land and Resource Use in Beaver, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 140.

Sumida, Valerie and David B. Andersen
1990 Patterns of Fish and Wildlife Use for Subsistence in Fort Yukon, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 179.

Thomas, Daniel C.
1982 The Role of Local Fish and Wildlife Resources in the Community of Shaktoolik, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 13.

United States Department of the Interior
1980 Subsistence Hunting of Migratory Birds in Alaska and Canada, Final Environmental

Impact Assessment [for Protocol Amending the Convention of August 16, 1916 for the Protection of Migratory Birds in Canada and the United States of America, January 30, 1979]. U.S. Fish and Wildlife Service, Washington D.C.

_____ 1983 Development of an Agreement on Interpretation and Implementation of a Protocol on Subsistence Hunting of Migratory Birds. Notice of Intent. U.S. Fish and Wildlife Service. Federal Register 48(48):10101-10103, March 10, 1983.

Usher, Peter J.
1982 Are We Defending a Culture or a Mode of Production? Paper presented to the panel on "Anthropologists' Contributions to Natives' Land Claims Research", Canadian Sociology and Anthropology Association Annual Meetings, University of Ottawa, Ontario.

_____ 1986 The Devolution of Wildlife Management and the Prospects for Wildlife Conservation in the Northwest Territories. Canadian Arctic Resources Committee.

Usher, Peter J. and George Wenzel
1987 Native Harvest Surveys and Statistics: A Critique of Their Construction and Use. In Arctic 40(2):145-160.

Usher, Peter J., Deborah DeLancey, George Wenzel, Michael Smith, and Pemela White
1985 An Evaluation of Native Harvest Survey Methodologies in Northern Canada. Environmental Studies Revolving Funds Report, No. 004. Ottawa.

Veltre, Douglas W. and Mary J. Veltre
1981 A Preliminary Baseline Study of Subsistence Resource Utilization in the Pribilof Islands, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 57.

_____ 1982 Resource Utilization in Unalaska, Aleutian Islands, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 58.

_____ 1983 Resource Utilization in Atka, Aleutian Islands, Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 88.

Walker, Robert J., David B. Anderson, and Louis Brown
1989 Community Profile Database Catalog. 3 volumes, Division of Subsistence, Alaska Department of Fish and Game.

Wentworth, Cynthia
1990 Personal Communication. Waterfowl Harvest Survey 1989 Estimated Totals, by species, season and strata.

Williamson, Lonnie
1984 "Taking Aim: Waterfowl Vs. Politics" In Outdoor Life, 174(Nov):18-2.

Wolfe, Robert J.
1979 Food Production in a Western Eskimo Population. Doctoral Dissertation in Anthropology, University of California, Los Angeles.

_____ 1981 Norton Sound/Yukon Delta Sociocultural Systems Baseline Analysis, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 59.

Wolfe, Robert J. and Robert G. Bosworth
1990 Subsistence in Alaska: A Summary. Division of Subsistence, Alaska Department of Fish and Game, Juneau, Alaska.

Wolfe, Robert J. and Linda J. Ellanna (compilers)
1983 Resource Use and Socioeconomic Systems: Case Studies of Fishing and Hunting in Alaskan Communities, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper NO. 61.

Wolfe, Robert J., Joseph J. Gross, Steven J. Langdon, John M. Wright, George K. Sherrod, and Linda J. Ellanna
1983 Subsistence-Based Economies in Coastal Communities of Southwest Alaska, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 89.

Wolfe , Robert J. and Robert J. Walker
1987 Subsistence Economies in Alaska: Productivity, Geography, and Development Impacts. In Arctic Anthropology 24(2):56-81.

Wright, John M., Judith M. Morris, and Robert Schroeder
1985 Bristol Bay Regional Subsistence Profile, Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 114.

APPENDIX TABLES

APPENDIX TABLE 1 ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
SOUTHEAST ARCHIPELAGO											
Angoon	46	242	0	0	0	288				0	0
Bal.of Petersburg Census SA*	41	216	0	0	14	271				27	27
Bal.of Wrangell Census SA *	29	152	0	0	10	191				19	19
Beecher Pass	85	833	0	0	0	918				0	0
Cape Pole	281	1000	0	0	625	1906				0	0
Coffman Cove	12	228	0	0	0	240				0	0
Craig	57	455	0	0	172	685				0	0
Edna Bay	15	152	0	0	54	221				24	24
Elfin Cove	0	0	0	0	0	0				0	0
Gustavus	21	256	0	0	10	287				0	0
Haines	0	654	0	0	74	727				0	0
Hollis	3	23	0	0	11	37				0	0
Hoonah	83	774	0	0	7	863				295	295
Hydaburg	29	151	0	0	0	181				643	643
Hyder	68	106	0	0	43	216				0	0
Kake	8	252	0	0	0	260				0	0
Kasaan	0	25	0	0	0	25				0	0
Klawock	73	186	0	0	0	258				571	571
Klukwan	14	36	0	0	0	49				0	0
Metlakatla	241	1024	0	0	14	1278				0	0
Meyers Chuck	53	212	0	0	88	353				0	0
North Whale Pass	8	42	0	0	0	50				0	0
Pelican	33	191	0	0	23	248				57	57
Petersburg	1651	5498	0	0	126	7274				0	0
Point Baker	17	49	0	0	0	66				0	0
Port Protection	8	89	0	0	9	106				0	0
Port Alexander	9	103	0	0	0	111				0	0
Saxman	2	79	0	0	39	120				0	0
Sitka	197	3950	0	0	246	4394				0	0
Skagway	7	89	0	0	0	95				0	0
Tenakee Springs	37	166	0	0	15	218				0	0
Thorne Bay	22	377	0	0	13	412				0	0
Wrangell	422	1775	0	0	197	2394				0	0
Yakutat	145	1010	0	0	57	1211				1183	1183
TOTAL FOR REGION	3717	20393	0	0	1846	25955				2819	2819
PRINCE WILLIAM SOUND											
Chenega Bay	6	151	0	0	0	157					32
Cordova (includes Eyak)	232	2226	13	0	0	2471					1358
San Juan Bay	0	66	0	0	0	66					0
Tatitlek	19	311	0	0	0	330	0	89	257	142	487
TOTAL FOR REGION	257	2754	13	0	0	3024					1877
LOWER KENAI PENINSULA											
English Bay	0	498	0	0	179	678	0	0	203	28	231
Port Graham	0	554	0	0	30	584	0	0	130	13	141
Seldovia	9	127	0	0	0	136	0	0	0	0	0
TOTAL FOR REGION	9	1179	0	0	210	1397	0	0	333	41	372

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
KODIAK ISLAND											
Akhiok	268	909	0	0	0	1177					346
Bal. of Kodiak Island Census SA*	33	851	0	0	0	884					550
Chiniak	5	100	0	0	0	105					165
Karluk	3	1337	0	0	0	1340					25
Kodiak City	59	1528	0	0	0	1587					1007
Kodiak Coast Guard Station	38	150	0	0	0	188					0
Larsen Bay	4	1108	0	0	0	1111					604
Old Harbor	187	1888	0	0	0	2076					1169
Ouzinkie	229	2610	0	0	0	2839					1645
Port Lions	3	930	0	0	0	933					144
TOTAL FOR REGION	829	11427	0	0	0	12256					5665
ALASKA PENINSULA											
Chignik Bay	47	103	0	0	0	150	0	0	0	0	0
Chignik Lagoon	26	139	0	0	0	166	0	0	0	0	0
Chignik Lake	22	331	0	0	21	374	0	0	468	0	468
Cold Bay *	129	571	9	3	20	733	1	43	1071	77	1192
Egegik	2	662	0	0	39	703	3	39	919	0	962
False Pass	182	574	0	0	0	755	0	0	894	0	894
Ivanof Bay	86	166	0	0	0	252	0	0	79	0	79
King Cove *	449	1991	33	11	71	2554	2	148	3732	270	4152
King Salmon*	531	2359	39	13	84	3026	0	0	0	0	0
Naknek*	313	1390	23	8	50	1784	0	0	0	0	0
Nelson Lagoon	39	294	0	0	0	333	0	3	136	46	184
Perryville	1	179	0	0	0	180	0	0	1016	0	1016
Pilot Point	160	412	50	17	53	693	0	78	1123	2	1203
Port Heiden	200	416	6	0	16	639	0	48	2118	396	2563
Sand Point *	550	2442	40	13	87	3134	2	182	4578	331	5093
South Naknek*	160	710	12	4	25	911	0	0	0	0	0
Ugashik	21	112	9	1	5	148	0	100	134	0	234
TOTAL FOR REGION	2920	12852	221	70	472	16535	8	641	16269	1122	18040
BRISTOL BAY											
Aleknagik *	71	326	6	4	0	406	9	29	279	14	331
Bal.of Bristol Bay Census Area *	13	62	1	1	0	77	2	5	53	3	62
Bal. of Dillingham Census Area *	46	214	4	2	0	266	6	19	183	9	217
Clark's Point *	31	143	3	2	0	178	4	13	122	6	145
Dillingham	374	2810	15	0	0	3199	0	0	301	19	321
Ekwok	31	206	0	1	0	238	0	0	0	0	0
Igiugig	18	119	0	0	0	137	0	24	72	72	167
Iliamna	24	42	0	0	0	67	0	75	285	16	376
Kokhanok	13	114	1	0	0	129	0	0	164	0	164
Koliganek	212	859	1	16	0	1088	10	31	145	0	187
Levelock	163	458	12	5	0	638	176	485	970	15	1646
Manokotak	357	772	99	42	0	1270	40	0	2480	0	2520

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
New Stuyahok	198	691	6	2	0	897	0	0	277	0	277
Newhalen	16	147	0	7	0	169	0	37	908	32	977
Nondalton	78	511	0	4	0	593	0	26	181	71	277
Pedro Bay	6	131	0	0	0	137	0	19	464	18	501
Port Alsworth	21	88	0	0	0	109	0	0	0	0	0
Portage Creek *	14	63	1	1	0	79	2	6	54	3	64
Togiak *	218	1006	19	11	0	1254	28	89	861	43	1021
Twin Hills*	17	80	1	1	0	99	2	7	68	3	81
TOTAL FOR REGION	1920	8842	170	98	0	11030	279	864	7867	323	9333
YUKON-KUSKOKWIM DELTA SOUTH COAST											
Eek *	313	1121	83	160	130	1808	6	22	11	100	139
Kipnuk *	497	1780	132	255	207	2870	9	35	18	158	220
Kongiganak *	354	1270	94	182	147	2047	6	25	13	113	157
Kwigillingok *	297	1065	79	152	124	1716	5	21	11	95	132
Tuntutuliak	357	1278	95	183	148	2061	6	25	13	114	158
Total for Subregion	1817	6514	483	932	756	10503	33	128	65	579	805
ADDITIONAL SOUTH COAST											
Goodnews Bay *	585	558	5	9	0	1156	5	21	11	93	130
Platinum *	158	150	1	2	0	312	1	6	3	25	35
Quinhagak	1100	1048	8	17	0	2174	10	39	20	176	244
Total for Subregion	1843	1756	14	28	0	3642	17	65	33	294	409
MID COAST											
Chefornak *	550	1076	56	150	85	1917	25	33	34	33	125
Chevak	1056	2066	107	288	164	3681	48	63	65	64	240
Hooper Bay	1362	2665	138	371	212	4747	62	81	84	83	310
Mekoryuk *	302	590	31	82	47	1052	14	18	19	18	69
Newtok*	411	804	42	112	64	1432	19	24	25	25	94
Nightmute *	304	594	31	83	47	1059	14	18	19	18	69
Scammon Bay	603	1181	61	164	94	2104	27	36	37	37	137
Toksook Bay *	719	1406	73	196	112	2505	33	43	44	44	164
Tununak	631	1235	64	172	98	2200	29	38	39	38	144
Total for Subregion	5937	11618	603	1617	922	20697	270	354	367	360	1352
NORTH COAST											
Alakanuk *	1238	1351	108	214	4	2914	64	29	0	6	98
Emmonak	1365	1489	119	236	5	3213	70	32	0	6	108
Kotlik	911	993	79	157	3	2144	47	21	0	4	72
Sheldon Point *	276	301	24	48	1	650	14	7	0	1	22
Totals for Subregion	3789	4134	330	655	13	8922	195	89	0	17	301
LOWER KUSKOKWIM RIVER											
Akiachak *	398	3078	46	199	46	3767	3	69	0	7	79
Akiak *	250	1938	29	125	29	2372	2	43	0	4	50
Aniak	417	3226	48	208	48	3947	3	72	0	7	83
Atmautluak *	203	1569	23	101	23	1920	2	35	0	4	40
Kasigluk*	351	2716	40	175	41	3323	3	61	0	6	70

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Kwethluk	473	3662	55	236	55	4480	4	82	0	8	94
Lower Kalskag*	243	1884	28	122	28	2306	2	42	0	4	48
Napakiak *	259	2005	30	129	30	2454	2	45	0	5	52
Napaskiak*	263	2032	30	131	30	2486	2	45	0	5	52
Nunapitchuk	308	2387	36	154	36	2921	2	53	0	6	61
Oscarville	55	422	6	27	6	517	0	9	0	1	11
Tuluksak	278	2153	32	139	32	2634	2	48	0	5	55
Upper Kalskag*	133	1033	15	67	15	1264	1	23	0	2	27
Totals for Subregion	3632	28106	419	1815	420	34391	28	629	0	65	722
YUKON RIVER											
Marshall (Fortuna Ledge)	231	538	22	141	25	956	0	11	5	10	26
Mountain Village	560	1305	54	342	60	2321	0	26	13	24	63
Pilot Station *	349	813	34	213	38	1446	0	16	8	15	39
Pitka's Point	87	203	8	53	9	361	0	4	2	4	10
Russian Mission	190	442	18	116	20	786	0	9	4	8	21
Saint Marys (Andreafsky)	376	876	37	229	41	1559	0	17	9	16	42
Totals for Subregion	1792	4176	174	1093	193	7429	0	83	41	78	202
Bethel	751	4668	41	145	33	5638	0	0	0	32	32
TOTAL FOR REGION	19561	60972	2064	6285	2338	91221	541	1349	506	1427	3822
UPPER COOK INLET											
Western Susitna	19	181	0	0	0	200					
Tyonek	9	213	0	0	0	222					
TOTAL FOR REGION	28	394	0	0	0	422					
UPPER KUSKOKWIM											
Bal. of Aniak Census Subarea*	50	216	5	0	0	271					0
Bal.of McGrath-Holy Cross CSA*	80	344	8	0	0	433					0
Chuathbaluk*	98	418	10	0	0	526					0
Crooked Creek*	99	425	10	0	0	534					0
Lake Minchumina*	28	118	3	0	0	148					0
Lime Village*	38	162	4	0	0	204					0
McGrath	343	1372	34	0	0	1750					0
Nikolai	165	827	17	0	0	1009					0
Red Devil*	33	142	3	0	0	178					0
Sleetmute*	102	439	10	0	0	551					0
Sparrevohn Air Force Base*	12	51	1	0	0	64					0
Stony River*	72	310	7	0	0	390					0
Takotna*	43	182	4	0	0	229					0
Tatalina Station CDP*	10	44	1	0	0	55					0
Telida*	30	128	3	0	0	161					0
TOTAL FOR REGION	1204	5179	121	0	0	6503					0

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
UPPER YUKON-KOYUKUK-LOWER TANANA											
Allakaket	547	1580	16	12	0	2155					0
Anvik*	211	484	3	1	0	700					0
Arctic Village*	336	770	5	1	0	1113					0
Bal.of Koyukuk-Mid Yukon CSA*	2198	5043	34	7	0	7283					0
Bal. of Yukon Flats Census SA*	104	239	2	0	0	346					0
Beaver	518	666	7	0	0	1190					0
Bettles	13	67	0	0	0	80					0
Birch Creek*	74	169	1	0	0	244					0
Campion Station*	31	70	0	0	0	101					0
Central*	107	245	2	0	0	354					0
Chalkytsik*	239	549	4	1	0	792					0
Chicken*	122	280	2	0	0	405					0
Circle*	239	549	4	1	0	792					0
Eagle*	494	1132	8	2	0	1635					0
Eagle Village*	201	461	3	1	0	666					0
Fort Yukon	3190	7702	29	10	0	10930					0
Galena	537	1886	19	0	0	2442					0
Grayling*	572	1313	9	2	0	1896					0
Holy Cross*	605	1389	9	2	0	2006					0
Hughes	258	573	0	0	0	831					0
Huslia	800	1488	26	0	0	2313					0
Indian Mountain C DP*	33	76	1	0	0	110					0
Kaltag*	707	1623	11	2	0	2343					0
Koyukuk*	364	835	6	1	0	1205					0
Manley Hot Springs*	224	514	3	1	0	742					0
Minto	592	1563	0	0	0	2155					0
Nenana*	1384	3175	22	4	0	4585					0
Nulato*	936	2148	15	3	0	3102					0
Rampart*	150	344	2	0	0	497					0
Ruby*	613	1407	10	2	0	2031					0
Shageluk*	366	841	6	1	0	1214					0
Stevens Village	170	476	10	0	0	656					0
Tanana	759	975	15	0	0	1749					0
Venetie*	603	1383	9	2	0	1998					0
Wiseman*	64	146	1	0	0	211					0
TOTAL FOR REGION	18362	42162	292	58	0	60874					
SEWARD-NORTON SOUND											
Bal. of Nome Census Area*	444	509	55	10	0	1019	4	117	259	60	441
Brevig Mission	815	218	6	3	0	1042	13	283	242	269	807
Elim*	863	990	108	20	0	1980	8	228	564	116	856
Golovin	503	498	90	17	1	1109	21	53	390	160	624
Koyuk*	736	843	92	17	0	1688	7	194	429	99	730
Nome*	5301	6087	655	87	0	12130	5	112	248	57	421
Port Clarence*	142	163	18	3	0	326	1	38	83	19	141
Saint Michael*	1046	1198	130	24	0	2398	10	276	610	140	1037
Shaktoolik*	594	681	74	14	0	1362	6	157	347	80	589
Shishmaref	890	1092	16	0	0	1999	0	652	1515	63	2230

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Stebbins	1795	2913	413	77	0	5198	13	358	791	182	1344
Teller*	900	1031	112	21	0	2064	9	238	525	121	892
Unalakleet*	2765	3169	344	63	0	6342	27	731	1614	371	2792
Wales*	521	597	65	12	0	1195	5	138	304	70	517
White Mountain*	597	685	74	14	0	1370	6	158	349	80	592
TOTAL FOR REGION	17913	20675	2253	381	3	41224	137	3733	8209	1885	13962
BERING STRAITS											
Diomede											
Gambell	3953	7713	0	0	37382	49048					
Savoonga											
TOTAL FOR REGION											
NORTHWEST ARCTIC											
Ambler*	158	418	1	0	4	581					593
Bal.of Northwest Arctic Bor.CA*	53	139	0	0	1	194					198
Buckland*	153	406	1	0	4	565					576
Deering*	95	251	1	0	2	349					356
Kiana*	242	642	2	0	6	893					911
Kivalina	221	222	1	0	46	490	0	0	21	274	296
Kobuk*	40	107	0	0	1	148					151
Kotzebue	1587	4543	16	0	0	6146					6459
Noatak*	204	541	2	0	5	752					767
Noorvik*	327	867	3	0	8	1205					1229
Selawik*	364	965	3	0	9	1342					1369
Shungnak*	140	370	1	0	3	515					525
TOTAL FOR REGION	3584	9471	33	0	89	13178					13428
ARCTIC SLOPE											
Anaktuvuk Pass*	399	344	0	0	0	744					633
Atqasuk*	319	275	0	0	0	594					505
Bal.of Barrow-Point Hope CSA*	32	27	0	0	0	59					51
Bal.of Prudhoe Bay-Kaktovik CSA	170	146	0	0	0	316					269
Barrow	3047	4122	0	0	0	7169					8176
Cape Lisburne*	18	16	0	0	0	34					29
Deadhorse*	0	0	0	0	0	0					0
Kaktovik	719	352	0	0	0	1072					556
Nuiqsut	1134	327	0	0	0	1461					221
Point Hope*	1002	864	0	0	1	1866					1587
Point Lay	669	668	0	0	3	1341					851
Prudhoe Bay*	0	0	0	0	0	0					0
Wainwright	1495	448	0	0	0	1943					1351
TOTAL FOR REGION	9005	7590	0	0	4	16598					14227
COPPER RIVER BASIN											
Chistochina	10	45	10	0	0	65					0
Chitina	2	24	0	0	0	26					0
Copper Center	45	183	15	0	0	243					0
East Glenn Highway	13	145	33	0	0	191					0
Gakona	0	140	0	0	0	140					0

APPENDIX TABLE 1 (CONTINUED)

ESTIMATED NUMBER OF MIGRATORY BIRDS AND EGGS HARVESTED BY RURAL ALASKA COMMUNITIES, EXPANDED TO 1985 COMMUNITY POPULATIONS

	NUMBER OF BIRDS						NUMBER OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Glennallen	0	40	0	0	0	40					0
Gulkana	22	36	0	0	0	58					0
Kenny Lake	0	90	0	0	0	90					0
Lake Louise	0	12	0	0	0	12					0
McCarthy	0	46	0	0	0	46					0
Mentasta	0	54	0	0	0	54					0
Mentasta Pass	0	53	0	2	0	55					0
Nabesna Road	0	0	0	0	0	0					0
North Slana Homestead	0	13	0	0	0	13					0
Paxson	6	395	21	0	0	422					0
Slana	0	0	0	0	0	0					0
Sourdough	0	22	0	0	0	22					0
South Slana Homestead	0	0	0	0	0	0					0
South Wrangell Mountains	8	16	0	0	0	24					0
Tazlina	13	65	16	0	0	94					0
Tonsina	2	102	0	0	0	104					0
West Glenn Highway	0	0	0	0	0	0					0
TOTAL FOR REGION	121	1481	95	2	0	1699					0
PARKS HIGHWAY											
Anderson	3	416	2	0	0	421					0
Cantwell	0	20	0	0	0	20					0
Chase	2	21	0	0	0	23					0
Gold Creek	0	12	0	0	0	12					0
Healy	20	112	1	0	0	133					0
Hurricane-Broad Pass	0	9	0	0	0	9					0
McKinley Park Village	10	25	1	0	0	35					0
Totals for Sample	47	552	5	0	0	607					0
TOTAL FOR REGION	35	615	4	0	0	653					0
UPPER TANANA											
Chisana	0	3	0	0	0	3					0
Dot Lake	0	60	0	0	0	60					0
Healy Lake*	5	128	0	0	0	133					1
Northway	128	1956	1	0	0	2086					0
Tanacross	38	332	0	0	0	370					19
Tetlin	1	621	0	0	0	622					9
Tok	19	1362	15	0	0	1396					23
Totals for Sample	170	4351	19	0	0	4539					45
TOTAL FOR REGION	191	4462	17	0	0	4670					53

* Unsurveyed communities for which harvests were extrapolated from surveyed communities.

APPENDIX TABLE 2. ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
SOUTHEAST ARCHIPELAGO											
Angoon	183	365	0	0	0	548				0	0
Bal.of Petersburg CSA*	204	334	0	0	22	560				5	5
Bal. of Wrangell CSA*	144	235	0	0	15	394				4	4
Beecher Pass	340	1250	0	0	0	1590				0	0
Cape Pole	1125	1500	0	0	938	3563				0	0
Coffman Cove	48	343	0	0	0	391				0	0
Craig	226	690	0	0	260	1176				0	0
Edna Bay	60	228	0	0	81	368				5	5
Elfin Cove	0	0	0	0	0	0				0	0
Gustavus	87	384	0	0	15	486				0	0
Haines	0	976	0	0	119	1095				0	0
Hollis	14	35	0	0	17	66				0	0
Hoonah	337	1165	0	0	9	1511				55	55
Hydaburg	119	227	0	0	0	345				129	129
Hyder	270	158	0	0	64	492				0	0
Kake	36	374	0	0	0	410				0	0
Kasaan	0	37	0	0	0	37				0	0
Klawock	292	279	0	0	0	571				114	114
Klukwan	55	54	0	0	0	109				0	0
Metlakatla	960	1542	0	0	14	2516				0	0
Meyers Chuck	212	318	0	0	133	663				0	0
North Whale Pass	33	63	0	0	0	96				0	0
Pelican	135	285	0	0	35	455				12	12
Petersburg	6652	8921	0	0	191	15764				0	0
Point Baker	68	74	0	0	0	142				0	0
Port Protection	31	133	0	0	13	176				0	0
Port Alexander	35	153	0	0	0	188				0	0
Saxman	11	120	0	0	60	191				0	0
Sitka	783	5875	0	0	408	7067				0	0
Skagway	25	134	0	0	0	159				0	0
Tenakee Springs	153	250	0	0	23	426				0	0
Thorne Bay	89	564	0	0	21	674				0	0
Wrangell	1700	2673	0	0	286	4659				0	0
Yakutat	584	1514	0	0	82	2180				239	239
TOTAL FOR REGION	15011	31252	0	0	2806	49069				563	563
PRINCE WILLIAM SOUND											
Chenega Bay	32	226	0	0	0	258					2
Cordova (includes Eyak)	1160	3339	130	0	0	4629					69
San Juan Bay	0	99	0	0	0	99					0
Tatitlek	76	314	0	0	0	389	0	13	38	21	73
TOTAL FOR REGION	1268	3978	130	0	0	5375					144
LOWER KENAI PENINSULA											
English Bay	0	501	0	0	246	747	0	0	31	4	35
Port Graham	0	547	0	0	49	596	0	0	19	2	21
Seldovia	44	254	0	0	0	298	0	0	0	0	0
TOTAL FOR REGION	44	1302	0	0	295	1641	0	0	49	6	55

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
KODIAK ISLAND											
Akhiok	1073	1365	0	0	0	2438					41
Bal.of Kodiak Island CSA*	137	1279	0	0	0	1416					86
Chiniak	63	487	0	0	0	550					65
Karluk	11	2010	0	0	0	2021					3
Kodiak City	247	2296	0	0	0	2543					154
Kodiak Coast Guard Station	152	228	0	0	0	381					0
Larsen Bay	12	1700	0	0	0	1713					76
Old Harbor	749	2830	0	0	0	3578					138
Ouzinkie	912	3913	0	0	0	4825					206
Port Lions	12	1392	0	0	0	1404					15
TOTAL FOR REGION	3368	17500	0	0	0	20869					784
ALASKA PENINSULA											
Chignik Bay	142	156	0	0	0	298	0	0	0	0	0
Chignik Lagoon	80	209	0	0	0	289	0	0	0	0	0
Chignik Lake	69	636	0	0	21	727	0	0	70	0	71
Cold Bay *	287	631 *	58	16	5	997	0	6	160	8	174
Egegik	6	992	0	0	0	998	0	6	137	0	144
False Pass	260	337	0	0	0	598	0	0	134	0	134
Ivanof Bay	258	249	0	0	0	507	0	0	12	0	12
King Cove *	1001	2199	202	55	16	3473	0	22	558	27	607
King Salmon *	1186	2605	240	65	19	4115	0	0	0	0	0
Naknek *	699	1536	141	38	11	2426	0	0	0	0	0
Nelson Lagoon	99	224	0	0	0	323	0	1	21	5	25
Perryville	4	269	0	0	0	273	0	0	152	0	152
Pilot Point	344	282	302	101	6	1035	0	12	169	1	181
Port Heiden	436	330	38	11	1	816	0	7	318	40	365
Sand Point *	1228	2697	248	67	20	4261	0	27	684	34	671
South Naknek *	357	784	72	20	6	1238	0	0	0	0	0
Ugashik	44	69	54	6	1	174	0	15	20	0	35
TOTAL FOR REGION	6500	14206	1356	378	108	22546	0	96	2436	114	2571
BRISTOL BAY											
Aleknagik *	209	418	37	36	0	700	2	4	42	4	53
Bal. of Bristol Bay CA*	39	79	7	7	0	132	0	1	8	1	10
Bal.of Dillingham CA*	137	274	24	24	0	459	1	2	28	3	34
Clark's Point *	92	184	16	16	0	307	1	2	19	2	23
Dillingham	1499	3939	86	0	0	5524	0	0	15	0	15
Ekwok	56	195	0	9	0	259	0	0	0	0	0
Igiugig	54	179	0	0	0	233	0	4	11	11	26
Iliamna	73	63	0	0	0	136	0	11	43	3	57
Kokhanok	40	171	12	0	0	224	0	0	25	0	25
Koliganek	382	794	6	135	0	1317	3	3	24	0	30
Levelock	326	417	72	36	0	851	39	53	162	2	256
Manokotak	1428	1082	596	420	0	3526	10	0	371	53	434
New Stuyahok	305	746	31	0	0	1081	0	0	46	0	46
Newhalen	46	221	0	112	0	380	0	5	137	5	148
Nondalton	232	768	0	77	0	1076	0	5	33	11	52

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Pedro Bay	17	191	0	0	0	208	0	2	70	2	75
Port Alsworth	64	132	0	0	0	196	0	0	0	0	0
Portage Creek *	41	81	7	7	0	136	0	1	8	1	10
Togiak *	645	1292	113	112	0	2161	6	11	131	14	162
Twin Hills *	51	102	9	9	0	171	1	1	10	1	13
TOTAL FOR REGION	5734	11328	1015	1000	0	19077	64	104	1176	113	1457
YUKON-KUSKOKWIM DELTA SOUTH COAST											
Eek *	1181	1871	749	1799	486	6086	1	3	2	17	23
Kipnuk *	1875	2970	1189	2856	772	9661	2	5	3	26	37
Kongiganak *	1337	2118	848	2037	550	6891	2	4	2	19	26
Kwigillingok *	1121	1776	711	1708	462	5778	1	3	2	16	22
Tuntutuliak	1346	2133	854	2051	554	6938	2	4	2	19	26
Total for Subregion	6861	10867	4350	10452	2824	35354	8	19	10	96	134
ADDITIONAL SOUTH COAST											
Goodnews Bay *	2926	836	43	94	0	3899	1	3	2	16	22
Platinum*	789	226	12	25	0	1052	0	1	0	4	6
Quinhagak	5499	1572	82	177	0	7330	2	6	3	29	41
Total for Subregion	9214	2634	137	296	0	12281	4	10	5	49	68
MID COAST											
Chefornak *	2367	1914	503	1679	329	6793	6	5	5	9	25
Chevak	4547	3676	966	3225	632	13046	12	9	10	16	48
Hooper Bay	5863	4741	1245	4158	815	16822	15	12	13	21	61
Mekoryuk *	1299	1050	276	921	181	3727	3	3	3	5	14
Newtok *	1769	1430	376	1255	246	5076	5	4	4	6	19
Nightmute *	1308	1057	278	927	182	3752	3	3	3	5	14
Scammon Bay	2598	2101	552	1843	361	7455	7	5	6	9	27
Toksook Bay *	3094	2502	657	2194	430	8877	8	6	7	11	32
Tununak	2718	2198	577	1928	378	7798	7	6	6	10	28
Total for Subregion	25564	20670	5430	18130	3553	73346	68	53	55	92	268
NORTH COAST											
Alakanuk *	5246	2042	970	2398	24	10680	16	4	0	2	22
Emmonak	5784	2251	1069	2644	27	11775	18	5	0	2	24
Kotlik	3859	1502	713	1764	18	7856	12	3	0	1	16
Sheldon Point *	1170	455	216	535	5	2382	4	1	0	0	5
Total for Subregion	16059	6250	2969	7341	74	32692	49	13	0	5	67
LOWER KUSKOKWIM RIVER											
Akiachak *	1477	4977	413	2229	256	9352	1	10	0	2	13
Akiak *	930	3134	260	1403	161	5888	0	7	0	1	8
Aniak	1548	5216	433	2336	268	9800	1	11	0	2	13
Atmautluak *	753	2538	210	1136	130	4768	0	5	0	1	6
Kasigluk *	1303	4392	364	1966	226	8252	1	9	0	1	11
Kwethluk	1757	5921	491	2651	304	11124	1	12	0	2	15
Lower Kalskag*	904	3047	253	1364	157	5725	0	6	0	1	8
Napakiak *	962	3242	269	1452	167	6092	0	7	0	1	8

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Napaskiak *	975	3286	273	1471	169	6173	0	7	0	1	8
Nunapitchuk	1146	3860	320	1729	198	7253	1	8	0	1	10
Oscarville	203	683	57	306	35	1284	0	1	0	0	2
Tuluksak	1033	3481	289	1559	179	6540	1	7	0	1	9
Upper Kalskag*	496	1670	139	748	86	3138	0	3	0	1	4
Total for Subregion	13487	45448	3769	20350	2335	85389	7	94	0	15	116
LOWER YUKON RIVER											
Marshall (Fortuna Ledge)	899	799	202	1578	97	3575	0	2	1	2	4
Mountain Village	2181	1940	489	3830	235	8676	0	4	2	5	11
Pilot Station *	1359	1209	305	2387	147	5407	0	2	1	3	7
Pitka's Point	339	302	76	595	37	1349	0	1	0	1	2
Russian Mission	739	657	166	1297	80	2939	0	1	1	2	4
Saint Marys (Andreafsky)	1465	1303	329	2572	158	5827	0	3	1	3	7
Total for Subregion	6982	6210	1567	12259	753	27772		12	5	16	34
Bethel	2759	7588	368	1622	187	12524	0	0	0	5	5
TOTAL FOR REGION	80926	99666	18589	70450	9726	279357	135	202	70	284	691
UPPER COOK INLET											
Western Susitna	74	355	0	0	0	429					
Tyonek	27	320	0	0	0	347					
TOTAL FOR REGION	101	675	0	0	0	776					
UPPER KUSKOKWIM											
Bal.of Aniak CSA*	202	324	51	0	0	576					0
Bal. McGrath-Holy Cross CSA*	321	516	81	0	0	918					0
Chuathbaluk*	391	627	98	0	0	1116					0
Crooked Creek*	397	637	100	0	0	1134					0
Lake Minchumina*	110	177	28	0	0	315					0
Lime Village*	151	243	38	0	0	432					0
McGrath	1374	2056	341	0	0	3772					0
Nikolai	661	1241	171	0	0	2073					0
Red Devil*	132	212	33	0	0	378					0
Sleetmute*	410	658	103	0	0	1170					0
Sparrevohn Air Force Base*	47	76	12	0	0	135					0
Stony River*	290	465	73	0	0	828					0
Takotna*	170	273	43	0	0	486					0
Tatalina Station CDP*	41	66	10	0	0	117					0
Telida*	120	192	30	0	0	342					0
TOTAL FOR REGION	4819	7764	1211	0	0	13793					0
UPPER YUKON-KOYUKUK-LOWER TANANA											
Allakaket	2732	2365	83	62	0	5241					0
Anvik*	990	595	21	8	0	1613					0
Arctic Village*	1574	946	34	12	0	2566					0
Bal. Koyukuk-Mid Yukon CSA*	10301	6192	221	79	0	16794					0
Bal. of Yukon Flats CSA*	489	294	11	4	0	797					0
Beaver	2586	998	58	0	0	3642					0
Bettles	77	115	0	0	0	192					0

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Birch Creek*	346	208	7	3	0	564					0
Campion Station*	143	86	3	1	0	233					0
Central*	501	301	11	4	0	816					0
Chalkytsik*	1121	674	24	9	0	1827					0
Chicken*	572	344	12	4	0	933					0
Circle*	1121	674	24	9	0	1827					0
Eagle*	2313	1390	50	18	0	3771					0
Eagle Village*	942	566	20	7	0	1536					0
Fort Yukon	12123	7702	244	190	0	20259					0
Galena	3220	2074	104	0	0	5398					0
Grayling*	2683	1613	58	21	0	4373					0
Holy Cross*	2838	1706	61	22	0	4626					0
Hughes	1292	859	0	0	0	2151					0
Huslia	6403	2230	131	0	0	8764					0
Indian Mountain CDP*	155	93	3	1	0	253					0
Kaltag*	3314	1992	71	25	0	5403					0
Koyukuk*	1705	1025	37	13	0	2779					0
Manley Hot Springs*	1049	631	23	8	0	1710					0
Minto	2957	2345	0	0	0	5302					0
Nenana*	6486	3899	139	50	0	10574					0
Nulato*	4387	2637	94	34	0	7153					0
Rampart*	703	423	15	5	0	1147					0
Ruby*	2873	1727	62	22	0	4684					0
Shageluk*	1717	1032	37	13	0	2799					0
Stevens Village	852	715	97	0	0	1664					0
Tanana	3060	1488	43	0	0	4590					0
Venetie*	2826	1699	61	22	0	4607					0
Wiseman*	298	179	6	2	0	486					0
TOTAL FOR REGION	86745	51817	1865	647	0	141074					
SEWARD-NORTON SOUND											
Bal.of Nome CA*	1633	767	489	84	0	2974	1	11	42	8	60
Brevig Mission	2393	495	33	33	0	2954	3	25	39	26	94
Elim*	3173	1490	951	163	0	5777	2	21	81	15	117
Golovin	1281	677	493	162	0	2613	5	5	62	30	97
Koyuk*	2704	1270	810	139	0	4924	2	17	69	13	99
Nome*	19499	9159	5839	1005	0	35502	1	10	40	7	57
Port Clarence*	522	245	156	27	0	951	0	3	13	2	19
Saint Michael*	3842	1805	1151	197	0	6995	2	25	98	18	141
Shaktoolik*	2182	1025	654	112	0	3973	1	14	55	10	80
Shishmaref	2501	1579	94	0	0	4174	0	59	242	4	305
Stebbins	8976	4311	4133	766	0	18187	0	0	0	0	0
Teller*	3306	1553	991	170	0	6020	2	21	84	15	122
Unalakleet*	10160	4773	3044	522	0	18500	6	66	258	47	373
Wales*	1914	891	574	98	0	3485	1	12	49	9	70
White Mountain*	2195	1031	658	113	0	3997	1	14	56	10	81
TOTAL FOR REGION	66281	31083	20070	3592	0	121025	27	304	1187	214	1717
BERING STRAITS											
Diomede	0	0	0	0	0	0					
Gambell	19765	11569	0	0	38848	70183					
Savoonga	0	0	0	0	0	0					
TOTAL FOR REGION											

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
NORTHWEST ARCTIC											
Ambler*	639	618	12	0	7	1277					114
Bal.of Northwest Arctic Bor.*	213	206	4	0	2	426					38
Buckland*	622	601	12	0	7	1242					111
Deering*	383	371	7	0	4	766					68
Kiana*	982	950	19	0	11	1962					175
Kivalina	647	219	6	0	91	963	0	0	3	59	63
Kobuk*	163	158	3	0	2	325					29
Kotzebue	6661	6819	132	0	0	13613					1238
Noatak*	827	800	16	0	10	1652					148
Noorvik*	1326	1282	25	0	15	2648					237
Selawik*	1476	1427	28	0	17	2949					263
Shungnak*	566	548	11	0	7	1131					101
TOTAL FOR REGION	14506	13999	273	0	175	28954					2584
ARCTIC SLOPE											
Anaktuvuk Pass*	1784	532	0	0	0	2316					95
Atqasuk*	1424	424	0	0	0	1849					76
Bal.of Barrow-Point Hope CS	142	42	0	0	0	185					8
Bal.Prudhoe Bay-Kaktovik CS	757	226	0	0	0	983					40
Barrow	14453	6458	0	0	0	20910					1232
Cape Lisburne*	82	25	0	0	0	107					4
Deadhorse*	0	0	0	0	0	0					0
Kaktovik	3240	529	0	0	0	3768					84
Nuiqsut	5092	479	0	0	0	5571					34
Point Hope*	4475	1334	0	0	1	5810					239
Point Lay	2812	1004	0	0	4	3820					128
Prudhoe Bay*	0	0	0	0	0	0					0
Wainwright	5821	672	0	0	0	6492					204
TOTAL FOR REGION	40083	11722	0	0	6	51811					2144
COPPER RIVER BASIN											
Chistochina	12	28	62	0	0	101					0
Chitina	2	17	0	0	0	19					0
Copper Center	108	128	89	0	0	325					0
East Glenn Highway	15	100	202	0	0	317					0
Gakona	0	98	0	0	0	98					0
Glennallen	0	23	0	0	0	23					0
Gulkana	26	36	0	0	0	62					0
Kenny Lake	0	64	0	0	0	64					0
Lake Louise	0	10	0	0	0	10					0
McCarthy	0	36	0	0	0	36					0
Mentasta	0	46	0	0	0	46					0
Mentasta Pass	0	38	0	13	0	51					0
Nabesna Road	0	0	0	0	0	0					0
North Slana Homestead	0	9	0	0	0	9					0
Paxson	12	261	124	0	0	397					0

APPENDIX TABLE 2. (CONTINUED) ESTIMATED POUNDS OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY EXPANDED TO 1985 COMMUNITY POPULATION

	POUNDS OF BIRDS						POUNDS OF EGGS				
	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER	TOTAL EGGS
Slana	0	0	0	0	0	0					0
Sourdough	0	14	0	0	0	14					0
South Slana Homestead	0	0	0	0	0	0					0
South Wrangell Mountains	10	13	0	0	0	23					0
Tazlina	22	47	99	0	0	168					0
Tonsina	3	77	0	0	0	80					0
West Glenn Highway	0	0	0	0	0	0					0
TOTAL FOR REGION	211	1047	575	13	0	1846					0
PARKS HIGHWAY											
Anderson	11	623	11	0	0	645					0
Cantwell	0	29	0	0	0	29					0
Chase	5	32	0	0	0	37					0
Gold Creek	0	18	0	0	0	18					0
Healy	59	168	8	0	0	235					0
Hurricane-Broad Pass	0	14	0	0	0	14					0
McKinley Park Village	29	37	6	0	0	72					0
TOTAL FOR REGION	104	921	26	0	0	1051					0
UPPER TANANA											
Chisana	0	3	0	0	0	3					0
Dot Lake	0	42	0	0	0	42					0
Healy Lake*	7	94	3	0	0	105					0
Northway	189	1408	10	0	0	1606					0
Tanacross	61	252	0	0	0	313					3
Tetlin	2	452	0	0	0	454					2
Tok	21	1038	90	0	0	1149					3
TOTAL FOR REGION	280	3289	103	0	0	3672					8

*Unsurveyed communities for which harvests were extrapolated from surveyed communities.

APPENDIX TABLE 3. ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
SOUTHEAST ARCHIPELAGO											
Angoon	0.07	0.37	0.00	0.00	0.00	0.44				0.00	0.00
Bal.of Petersburg CSA*	0.15	0.79	0.00	0.00	0.05	0.99				0.10	0.10
Bal.of Wrangell CSA*	0.15	0.79	0.00	0.00	0.05	0.99				0.10	0.10
Beecher Pass	1.93	18.93	0.00	0.00	0.00	20.86				0.00	0.00
Cape Pole	5.63	20.00	0.00	0.00	12.50	38.13				0.00	0.00
Coffman Cove	0.04	0.84	0.00	0.00	0.00	0.88				0.00	0.00
Craig	0.05	0.40	0.00	0.00	0.15	0.61				0.00	0.00
Edna Bay	0.23	2.30	0.00	0.00	0.81	3.35				0.36	0.36
Elfin Cove	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00
Gustavus	0.10	1.18	0.00	0.00	0.05	1.32				0.00	0.00
Haines	0.00	0.33	0.00	0.00	0.04	0.37				0.00	0.00
Hollis	0.04	0.30	0.00	0.00	0.15	0.49				0.00	0.00
Hoonah	0.09	0.84	0.00	0.00	0.01	0.94				0.32	0.32
Hydaburg	0.06	0.33	0.00	0.00	0.00	0.39				1.39	1.39
Hyder	0.83	1.31	0.00	0.00	0.53	2.67				0.00	0.00
Kake	0.01	0.40	0.00	0.00	0.00	0.41				0.00	0.00
Kasaan	0.00	0.30	0.00	0.00	0.00	0.30				0.00	0.00
Klawock	0.10	0.26	0.00	0.00	0.00	0.36				0.80	0.80
Klukwan	0.09	0.23	0.00	0.00	0.00	0.32				0.00	0.00
Metlakatla	0.17	0.72	0.00	0.00	0.01	0.90				0.00	0.00
Meyers Chuck	1.00	4.00	0.00	0.00	1.67	6.67				0.00	0.00
North Whale Pass	0.10	0.51	0.00	0.00	0.00	0.61				0.00	0.00
Pelican	0.14	0.82	0.00	0.00	0.10	1.06				0.24	0.24
Petersburg	0.52	1.73	0.00	0.00	0.04	2.28				0.00	0.00
Point Baker	0.49	1.40	0.00	0.00	0.00	1.89				0.00	0.00
Port Protection	0.14	1.53	0.00	0.00	0.16	1.83				0.00	0.00
Port Alexander	0.07	0.78	0.00	0.00	0.00	0.85				0.00	0.00
Saxman	0.01	0.29	0.00	0.00	0.14	0.44				0.00	0.00
Sitka	0.02	0.48	0.00	0.00	0.03	0.54				0.00	0.00
Skagway	0.01	0.14	0.00	0.00	0.00	0.15				0.00	0.00
Tenakee Springs	0.26	1.17	0.00	0.00	0.11	1.54				0.00	0.00
Thorne Bay	0.05	0.91	0.00	0.00	0.03	1.00				0.00	0.00
Wrangell	0.18	0.74	0.00	0.00	0.08	1.00				0.00	0.00
Yakutat	0.21	1.48	0.00	0.00	0.08	1.78				1.74	1.74
Total for Sample	0.15	0.79	0.00	0.00	0.05	0.99				0.10	0.10
TOTAL FOR REGION	0.14	0.78	0.00	0.00	0.07	0.99				0.11	0.11
PRINCE WILLIAM SOUND											
Chenega Bay	0.10	2.52	0.00	0.00	0.00	2.62					0.53
Cordova (includes Eyak)	0.10	0.97	0.01	0.00	0.00	1.07					0.59
San Juan Bay	0.00	3.88	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.00
Tatitlek	0.17	2.77	0.00	0.00	0.00	2.94	0.00	0.79	2.29	1.27	4.35
Totals for Sample	0.10	1.11	0.01	0.00	0.00	1.22					0.77
TOTAL FOR REGION	0.10	1.10	0.01	0.00	0.00	1.21					0.75
LOWER KENAI PENINSULA											
English Bay	0.00	2.60	0.00	0.00	0.93	3.53	0.00	0.00	1.06	0.15	1.21
Port Graham	0.00	2.94	0.00	0.00	0.16	3.11	0.00	0.00	0.69	0.07	0.75
Seldovia	0.02	0.32	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00
Totals for Sample	0.01	1.19	0.00	0.00	0.18	1.39	0.00	0.00	0.31	0.04	0.34
TOTAL FOR REGION	0.01	1.51	0.00	0.00	0.27	1.78	0.00	0.00	0.43	0.05	0.48

APPENDIX TABLE 3. (CONTINUED) ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
KODIAK ISLAND											
Akhiok	2.46	8.34	0.00	0.00	0.00	10.80					3.17
Bal. Kodiak Island CA*	0.01	0.25	0.00	0.00	0.00	0.26					0.16
Chiniak	0.02	0.34	0.00	0.00	0.00	0.36					0.57
Karluk	0.03	11.73	0.00	0.00	0.00	11.76					0.22
Kodiak City	0.01	0.25	0.00	0.00	0.00	0.26					0.16
Kodiak Coast Guard Station	0.02	0.09	0.00	0.00	0.00	0.11					0.00
Larsen Bay	0.02	5.10	0.00	0.00	0.00	5.12					2.78
Old Harbor	0.54	5.49	0.00	0.00	0.00	6.03					3.40
Ouzinkie	0.97	11.11	0.00	0.00	0.00	12.08					7.00
Port Lions	0.01	3.08	0.00	0.00	0.00	3.09					0.48
Totals for Sample	0.07	0.91	0.00	0.00	0.00	0.97					0.45
TOTAL FOR REGION	0.06	0.88	0.00	0.00	0.00	0.95					0.44
ALASKA PENINSULA											
Chignik Bay	0.36	0.80	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00
Chignik Lagoon	0.66	3.49	0.00	0.00	0.00	4.15	0.00	0.00	0.00	0.00	0.00
Chignik Lake	0.13	2.02	0.00	0.00	0.13	2.28	0.00	0.00	2.85	0.00	2.85
Cold Bay*	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.27	6.82	0.49	7.59
Egegik	0.02	5.91	0.00	0.00	0.35	6.28	0.03	0.35	8.21	0.00	8.59
False Pass	2.36	7.45	0.00	0.00	0.00	9.81	0.00	0.00	11.61	0.00	11.61
Ivanof Bay	1.76	3.38	0.00	0.00	0.00	5.14	0.00	0.00	1.62	0.00	1.62
King Cove *	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.27	6.82	0.49	7.59
King Salmon*	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.00	0.00	0.00	0.00
Naknek *	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.00	0.00	0.00	0.00
Nelson Lagoon	0.90	6.68	0.00	0.00	0.00	7.57	0.00	0.06	3.09	1.04	4.19
Perryville	0.01	1.30	0.00	0.00	0.00	1.31	0.00	0.00	7.42	0.00	7.42
Pilot Point	2.03	5.22	0.63	0.22	0.68	8.77	0.00	0.98	14.22	0.03	15.23
Port Heiden	1.85	3.85	0.06	0.00	0.15	5.91	0.00	0.45	19.61	3.67	23.73
Sand Point*	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.27	6.82	0.49	7.59
South Naknek *	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.00	0.00	0.00	0.00
Ugashik	2.10	11.20	0.90	0.10	0.50	14.80	0.00	10.00	13.40	0.00	23.40
TOTALS for Sample	0.82	3.64	0.06	0.02	0.13	4.67	0.00	0.27	6.82	0.49	7.59
TOTAL FOR REGION	0.82	3.62	0.06	0.02	0.13	4.66	0.00	0.18	4.58	0.32	5.08
BRISTOL BAY											
Aleknagik*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Bal.of Bristol Bay Census Area	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Bal.of Dillingham Census Area*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Clark's Point*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Dillingham	0.17	1.31	0.01	0.00	0.00	1.49	0.00	0.00	0.14	0.01	0.15
Ekwok	0.29	1.93	0.00	0.01	0.00	2.22	0.00	0.00	0.00	0.00	0.00
Igiugig	0.47	3.14	0.00	0.00	0.00	3.61	0.00	0.63	1.89	1.89	4.40
Iliamna	0.19	0.34	0.00	0.00	0.00	0.53	0.00	0.59	2.26	0.13	2.99
Kokhanok	0.20	1.68	0.02	0.00	0.00	1.90	0.00	0.00	2.41	0.00	2.41
Koliganek	1.32	5.33	0.01	0.10	0.00	6.76	0.06	0.19	0.90	0.00	1.16
Levelock	1.49	4.20	0.11	0.04	0.00	5.85	1.62	4.45	8.90	0.13	15.10
Manokotak	1.16	2.50	0.32	0.14	0.00	4.11	0.13	0.00	8.00	0.00	8.13

APPENDIX TABLE 3. (CONTINUED) ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
New Stuyahok	0.58	2.04	0.02	0.01	0.00	2.65	0.00	0.00	0.81	0.00	0.81
Newhalen	0.10	0.89	0.00	0.04	0.00	1.02	0.00	0.23	5.55	0.19	5.97
Nondalton	0.33	2.19	0.00	0.02	0.00	2.54	0.00	0.14	0.96	0.38	1.48
Pedro Bay	0.08	1.87	0.00	0.00	0.00	1.95	0.00	0.27	6.63	0.25	7.15
Port Alsworth	0.32	1.32	0.00	0.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00
Portage Creek*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Togiak*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
Twin Hills*	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
TOTALS for Sample	0.39	1.81	0.03	0.02	0.00	2.26	0.05	0.16	1.55	0.08	1.84
TOTAL FOR REGION	0.39	1.78	0.03	0.02	0.00	2.21	0.06	0.17	1.58	0.06	1.87
YUKON-KUSKOKWIM DELTA SOUTH COAST											
Eek *	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
Kipnuk *	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
Kongiganak *	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
Kwigillingok *	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
Tuntutuliak	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
Total for Subregion	1.22	4.36	0.32	0.62	0.51	7.03	0.02	0.09	0.04	0.39	0.54
ADDITIONAL SOUTH COAST											
Goodnews Bay *	2.43	2.31	0.02	0.04	0.00	4.80	0.02	0.09	0.04	0.39	0.54
Platinum *	2.43	2.31	0.02	0.04	0.00	4.80	0.02	0.09	0.04	0.39	0.54
Quinhagak	2.43	2.31	0.02	0.04	0.00	4.80	0.02	0.09	0.04	0.39	0.54
Total for Subregion	2.43	2.31	0.02	0.04	0.00	4.80	0.02	0.09	0.04	0.39	0.54
MID COAST											
Chefornak *	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Chevak	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Hooper Bay	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Mekoryuk *	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Newtok*	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Nightmute*	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Scammon Bay	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Toksook Bay *	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Tununak	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
Totals for Subregion	1.98	3.88	0.20	0.54	0.31	6.92	0.09	0.12	0.12	0.12	0.45
NORTH COAST											
Alakanuk*	2.23	2.43	0.19	0.38	0.01	5.24	0.11	0.05	0.00	0.01	0.18
Emmonak	2.23	2.43	0.19	0.38	0.01	5.24	0.11	0.05	0.00	0.01	0.18
Kotlik	2.23	2.43	0.19	0.38	0.01	5.24	0.11	0.05	0.00	0.01	0.18
Sheldon Point *	2.23	2.43	0.19	0.38	0.01	5.24	0.11	0.05	0.00	0.01	0.18
Totals for Subregion	2.23	2.43	0.19	0.38	0.01	5.24	0.11	0.05	0.00	0.01	0.18
LOWER KUSKOKWIM RIVER											
Akiachak *	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Akiak*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Aniak	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Atmautluak *	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Kasigluk*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17

APPENDIX TABLE 3. (CONTINUED)

ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
Kwethluk	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Lower Kalskag*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Napakiak*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Napaskiak*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Nunapitchuk	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Oscarville	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Tuluksak	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Upper Kalskag*	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
Totals for Subregion	0.87	6.71	0.10	0.43	0.10	8.21	0.01	0.15	0.00	0.02	0.17
LOWER YUKON RIVER											
Marshall (Fortuna Ledge)	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Mountain Village	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Pilot Station *	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Pitka's Point	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Russian Mission	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Saint Marys (Andreafsky)	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Totals for Subregion	0.82	1.91	0.08	0.50	0.09	3.40	0.00	0.04	0.02	0.04	0.09
Bethel	0.19	1.17	0.01	0.04	0.01	1.41	0.00	0.00	0.00	0.01	0.01
TOTAL FOR REGION	1.13	3.52	0.12	0.36	0.13	5.27	0.03	0.08	0.03	0.08	0.22
UPPER COOK INLET											
Western Susitna	0.12	1.10	0.00	0.00	0.00	1.21					0.00
Tyonek	0.03	0.79	0.00	0.00	0.00	0.82					0.00
TOTAL FOR REGION	0.06	0.91	0.00	0.00	0.00	0.97					0.00
UPPER KUSKOKWIM											
Bal.of Aniak Census Subarea*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Bal.of McGrath-Holy Cross CSA	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Chuathbaluk*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Crooked Creek*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Lake Minchumina*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Lime Village*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
McGrath	0.67	2.70	0.07	0.00	0.00	3.44					0.00
Nikolai	1.36	6.78	0.14	0.00	0.00	8.27					0.00
Red Devil*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Sleetmute*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Sparrevohn Air Force Base*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Stony River*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Takotna*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Tatalina Station CDP*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Telida*	0.79	3.37	0.08	0.00	0.00	4.24					0.00
Totals for Sample	0.79	3.37	0.08	0.00	0.00	4.24					0.00
TOTAL FOR REGION	0.79	3.42	0.08	0.00	0.00	4.30					0.00

APPENDIX TABLE 3. (CONTINUED) ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
UPPER YUKON-KOYUKUK-LOWER TANANA											
Allakaket	2.91	8.40	0.08	0.07	0.00	11.46					0.00
Anvik*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Arctic Village*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Bal.of Koyukuk-Mid Yukon CSA*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Bal. of Yukon Flats CSA*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Beaver	6.47	8.33	0.08	0.00	0.00	14.88					0.00
Bettles	0.15	0.77	0.00	0.00	0.00	0.93					0.00
Birch Creek*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Campion Station*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Central*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Chalkytsik*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Chicken*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Circle*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Eagle*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Eagle Village*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Fort Yukon	4.70	11.36	0.04	0.01	0.00	16.12					0.00
Galena	0.57	1.99	0.02	0.00	0.00	2.58					0.00
Grayling*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Holy Cross*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Hughes	2.81	6.22	0.00	0.00	0.00	9.03					0.00
Huslia	2.94	5.47	0.09	0.00	0.00	8.51					0.00
Indian Mountain CDP*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Kaltag*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Koyukuk*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Manley Hot Springs*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Minto	2.83	7.48	0.00	0.00	0.00	10.31					0.00
Nenana*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Nulato*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Rampart*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Ruby*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Shageluk*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Stevens Village	1.76	4.91	0.10	0.00	0.00	6.77					0.00
Tanana	1.79	2.29	0.03	0.00	0.00	4.12					0.00
Venetie*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Wiseman*	2.54	5.84	0.04	0.01	0.00	8.43					0.00
Totals for Sample	2.54	5.84	0.04	0.01	0.00	8.43					0.00
TOTAL FOR REGION	2.48	5.71	0.04	0.01	0.00	8.24					0.00
SEWARD-NORTON SOUND											
Bal. Nome CA*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Brevig Mission	4.94	1.32	0.03	0.02	0.00	6.31	0.08	1.72	1.47	1.63	4.89
Elim*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Golovin	3.84	3.81	0.69	0.13	0.01	8.47	0.16	0.40	2.97	1.22	4.76
Koyuk*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Nome*	1.64	1.88	0.20	0.03	0.00	3.75	0.00	0.03	0.08	0.02	0.13
Port Clarence*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Saint Michael*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Shaktoolik*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Shishmaref	2.17	2.66	0.04	0.00	0.00	4.87	0.00	1.59	3.69	0.15	5.44

APPENDIX TABLE 3. (CONTINUED) ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
Stebbins	4.83	7.83	1.11	0.21	0.00	13.98	0.04	0.96	2.13	0.49	3.61
Teller*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Unalakleet*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Wales*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
White Mountain*	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
Totals for Sample	3.64	4.18	0.45	0.08	0.00	8.36	0.04	0.96	2.13	0.49	3.61
TOTAL FOR REGION	2.68	3.10	0.34	0.05	0.00	6.17	0.02	0.56	1.23	0.28	2.09
BERING STRAITS											
Diomede											
Gambell	8.00	15.61	0.00	0.00	75.67	99.29					
Savoonga											
TOTAL FOR REGION											
NORTHWEST ARCTIC											
Ambler*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Bal. Northwest Arctic Bor.CA*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Buckland*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Deering*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Kiana*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Kivalina	0.77	0.78	0.00	0.00	0.16	1.72	0.00	0.00	0.07	0.96	1.04
Kobuk*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Kotzebue	0.60	1.73	0.01	0.00	0.00	2.33					2.45
Noatak*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Noorvik*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Selawik*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Shungnak*	0.62	1.64	0.01	0.00	0.01	2.28					2.32
Totals for Sample	0.62	1.64	0.01	0.00	0.01	2.28					2.32
TOTAL FOR REGION	0.62	1.64	0.01	0.00	0.01	2.28					2.32
ARCTIC SLOPE											
Anaktuvuk Pass*	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Atqasuk*	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Bal. Barrow-Point Hope CSA*	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Bal. Prudhoe Bay-Kaktovik CSA	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Barrow	0.99	1.34	0.00	0.00	0.00	2.33					2.66
Cape Lisburne*	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Deadhorse*	0.00	0.00	0.00	0.00	0.00	0.00					0.00
Kaktovik	3.44	1.69	0.00	0.00	0.00	5.13					2.66
Nuiqsut	3.37	0.97	0.00	0.00	0.00	4.34					0.66
Point Hope*	1.68	1.45	0.00	0.00	0.00	3.13					2.66
Point Lay	6.43	6.43	0.00	0.00	0.03	12.89					8.19
Prudhoe Bay*	0.00	0.00	0.00	0.00	0.00	0.00					0.00
Wainwright	2.94	0.88	0.00	0.00	0.00	3.82					2.66
Totals for Sample	1.68	1.45	0.00	0.00	0.00	3.13					2.66
TOTAL FOR REGION	1.63	1.30	0.00	0.00	0.00	3.01					2.58
COPPER RIVER BASIN											
Chistochina	0.13	0.57	0.13	0.00	0.00	0.82					0.00
Chitina	0.06	0.69	0.00	0.00	0.00	0.74					0.00
Copper Center	0.09	0.37	0.03	0.00	0.00	0.49					0.00
East Glenn Highway	0.06	0.67	0.15	0.00	0.00	0.88					0.00
Gakona	0.00	0.67	0.00	0.00	0.00	0.67					0.00

APPENDIX TABLE 3. (CONTINUED) ESTIMATED NUMBER PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER BIRDS	TOTAL BIRDS	GOOSE	DUCK	GULL	OTHER EGGS	TOTAL EGGS
Glennallen	0.00	0.09	0.00	0.00	0.00	0.09					0.00
Gulkana	0.33	0.54	0.00	0.00	0.00	0.87					0.00
Kenny Lake	0.00	0.28	0.00	0.00	0.00	0.28					0.00
Lake Louise	0.00	0.31	0.00	0.00	0.00	0.31					0.00
McCarthy	0.00	1.21	0.00	0.00	0.00	1.21					0.00
Mentasta	0.00	0.70	0.00	0.00	0.00	0.70					0.00
Mentasta Pass	0.00	2.04	0.00	0.08	0.00	2.12					0.00
Nabesna Road	0.00	0.00	0.00	0.00	0.00	0.00					0.00
North Slana Homestead	0.00	0.21	0.00	0.00	0.00	0.21					0.00
Paxson	0.15	10.13	0.54	0.00	0.00	10.82					0.00
Slana	0.00	0.00	0.00	0.00	0.00	0.00					0.00
Sourdough	0.00	0.85	0.00	0.00	0.00	0.85					0.00
South Slana Homestead	0.00	0.00	0.00	0.00	0.00	0.00					0.00
South Wrangell Mountains	0.17	0.33	0.00	0.00	0.00	0.52					0.00
Tazlina	0.04	0.18	0.04	0.00	0.00	0.26					0.00
Tonsina	0.01	0.34	0.00	0.00	0.00	0.35					0.00
West Glenn Highway	0.00	0.00	0.00	0.00	0.00	0.00					0.00
TOTALS for Region	0.03	0.43	0.03	0.00	0.00	0.49					0.00
PARKS HIGHWAY											
Anderson	0.01	0.73	0.00	0.00	0.00	0.75					0.00
Cantwell	0.00	0.22	0.00	0.00	0.00	0.22					0.00
Chase	0.03	0.27	0.00	0.00	0.00	0.29					0.00
Gold Creek	0.00	1.00	0.00	0.00	0.00	1.00					0.00
Healy	0.05	0.27	0.00	0.00	0.00	0.32					0.00
Hurricane-Broad Pass	0.00	0.22	0.00	0.00	0.00	0.22					0.00
McKinley Park Village	0.15	0.38	0.01	0.00	0.00	0.54					0.00
Totals for Sample	0.04	0.43	0.00	0.00	0.00	0.48					0.00
TOTALS for Region	0.03	0.48	0.00	0.00	0.00	0.51					0.00
UPPER TANANA											
Chisana	0.00	0.23	0.00	0.00	0.00	0.23					0.00
Dot Lake	0.00	0.77	0.00	0.00	0.00	0.77					0.00
Healy Lake*	0.13	3.46	0.01	0.00	0.00	3.61					0.04
Northway	0.54	8.19	0.01	0.00	0.00	8.73					0.00
Tanacross	0.26	2.23	0.00	0.00	0.00	2.48					0.13
Tetlin	0.01	6.98	0.00	0.00	0.00	6.99					0.10
Tok	0.03	1.97	0.02	0.00	0.00	2.02					0.03
Totals for Sample	0.13	3.46	0.01	0.00	0.00	3.61					0.04
TOTAL FOR REGION	0.15	3.44	0.01	0.00	0.00	3.60					0.04

*Unsurveyed communities for w ich harvests were extrapolated from surveyed communities

APPENDIX TABLE 4 ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
SOUTHEAST ARCHIPELAGO														
Angoon	0.28	0.56	0.00	0.00	0.00	0.84				0.00	0.00	0.84	238.5	0.35
Bal.of Petersburg Census SA*	0.75	1.22	0.00	0.00	0.08	2.04				0.02	0.02	2.06		
Bal.of Wrangell Census SA*	0.75	1.22	0.00	0.00	0.08	2.04				0.02	0.02	2.06		
Beecher Pass	7.73	28.41	0.00	0.00	0.00	36.14				0.00	0.00	36.14	534.9	6.76
Cape Pole	22.50	30.00	0.00	0.00	18.75	71.25				0.00	0.00	71.25	1149.8	6.20
Coffman Cove	0.18	1.26	0.00	0.00	0.00	1.44				0.00	0.00	1.44	188.4	0.76
Craig	0.20	0.61	0.00	0.00	0.23	1.04				0.00	0.00	1.04	186.3	0.56
Edna Bay	0.91	3.45	0.00	0.00	1.22	5.58				0.07	0.07	5.65	557.3	1.01
Elfin Cove	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	263.7	0.00
Gustavus	0.40	1.77	0.00	0.00	0.07	2.24				0.00	0.00	2.24	252.6	0.89
Haines	0.00	0.49	0.00	0.00	0.06	0.55				0.00	0.00	0.55	105.7	0.52
Hollis	0.19	0.46	0.00	0.00	0.23	0.88				0.00	0.00	0.88	173.5	0.51
Hoonah	0.37	1.27	0.00	0.00	0.01	1.65				0.06	0.06	1.71	374.6	0.46
Hydaburg	0.26	0.49	0.00	0.00	0.00	0.75				0.28	0.28	1.03	342.6	0.30
Hyder	3.34	1.95	0.00	0.00	0.79	6.08				0.00	0.00	6.08	400.6	1.52
Kake	0.06	0.59	0.00	0.00	0.00	0.65				0.00	0.00	0.65	157.8	0.41
Kasaan	0.00	0.45	0.00	0.00	0.00	0.45				0.00	0.00	0.45	185.6	0.24
Klawock	0.41	0.39	0.00	0.00	0.00	0.80				0.16	0.16	0.96	238.6	0.40
Klukwan	0.36	0.35	0.00	0.00	0.00	0.71				0.00	0.00	0.71	239.9	0.30
Metlakatla	0.67	1.08	0.00	0.00	0.01	1.76				0.00	0.00	1.76	70.9	2.49
Meyers Chuck	4.00	6.00	0.00	0.00	2.50	12.50				0.00	0.00	12.50	414.2	3.02
North Whale Pass	0.39	0.76	0.00	0.00	0.00	1.15				0.00	0.00	1.15	186.1	0.62
Pelican	0.58	1.22	0.00	0.00	0.15	1.95				0.05	0.05	2.00	362.8	0.55
Petersburg	2.09	2.80	0.00	0.00	0.06	4.95				0.00	0.00	4.95	199.6	2.48
Point Baker	1.94	2.11	0.00	0.00	0.00	4.05				0.00	0.00	4.05	343.7	1.18
Port Protection	0.53	2.29	0.00	0.00	0.22	3.04				0.00	0.00	3.04	312.5	0.97
Port Alexander	0.26	1.17	0.00	0.00	0.00	1.43				0.00	0.00	1.43	302.0	0.47
Saxman	0.04	0.44	0.00	0.00	0.22	0.70				0.00	0.00	0.70	86.9	0.81
Sitka	0.10	0.72	0.00	0.00	0.05	0.87				0.00	0.00	0.87	146.0	0.59
Skagway	0.04	0.21	0.00	0.00	0.00	0.25				0.00	0.00	0.25	52.5	0.48
Tenakee Springs	1.08	1.76	0.00	0.00	0.16	3.00				0.00	0.00	3.00	351.0	0.85
Thorne Bay	0.22	1.37	0.00	0.00	0.05	1.64				0.00	0.00	1.64	187.2	0.87
Wrangell	0.71	1.12	0.00	0.00	0.12	1.95				0.00	0.00	1.95	168.8	1.16
Yakutat	0.86	2.22	0.00	0.00	0.12	3.20				0.35	0.35	3.55	397.9	0.89
Total for Sample	0.75	1.22	0.00	0.00	0.08	2.04				0.02	0.02	2.06		
TOTAL FOR REGION	0.57	1.19	0.00	0.00	0.11	1.87				0.02	0.02	1.89		

APPENDIX TABLE 4 ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
LOWER KENAI PENINSULA														
English Bay	0.00	2.61	0.00	0.00	1.28	3.89	0.00	0.00	0.16	0.02	0.18	4.07	147.0	2.77
Port Graham	0.00	2.91	0.00	0.00	0.26	3.17	0.00	0.00	0.10	0.01	0.11	3.28	145.0	2.26
Seldovia	0.11	0.63	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.74	50.5	1.47
Totals for Sample	0.07	1.39	0.00	0.00	0.26	1.72	0.00	0.00	0.05	0.01	0.05	0.04		
TOTAL FOR REGION	0.06	1.66	0.00	0.00	0.38	2.10	0.00	0.00	0.06	0.01	0.07	2.17		
PRINCE WILLIAM SOUND														
Chenega Bay	0.53	3.77	0.00	0.00	0.00	4.30					0.03	4.33	361.0	1.20
Cordova (includes Eyak)	0.50	1.45	0.06	0.00	0.00	2.01					0.03	2.04	139.5	1.46
San Juan Bay	0.00	5.82	0.00	0.00	0.00	5.82					0.00	5.82	205.1	2.84
Tatitlek	0.68	2.80	0.00	0.00	0.00	3.48	0.00	0.12	0.34	0.19	0.65	4.13	340.3	1.21
Totals for Sample	0.51	1.60	0.05	0.00	0.00	2.16					0.06	2.27		
TOTALS FOR REGION	0.51	1.59	0.05	0.00	0.00	2.15					0.06	2.26		
KODIAK ISLAND														
Akhiok	9.85	12.52	0.00	0.00	0.00	22.37					0.38	22.75	517.9	4.39
Bal.of Kodiak Island Census SA	0.28	1.39	0.00	0.00	0.00	1.67					0.06	1.73		
Chiniak	0.22	1.68	0.00	0.00	0.00	1.90					0.23	2.12	243.8	0.87
Karluk	0.10	17.63	0.00	0.00	0.00	17.73					0.03	17.76	832.1	2.13
Kodiak City	0.04	0.37	0.00	0.00	0.00	0.41					0.03	0.44	137.6	0.32
Kodiak Coast Guard Station	0.09	0.13	0.00	0.00	0.00	0.22					0.00	0.22	160.1	0.14
Larsen Bay	0.06	7.84	0.00	0.00	0.00	7.89					0.35	8.24	396.9	2.08
Old Harbor	2.18	8.23	0.00	0.00	0.00	10.40					0.40	10.80	465.5	2.32
Ouzinkie	3.88	16.65	0.00	0.00	0.00	20.53					0.88	21.41	358.3	5.97
Port Lions	0.04	4.61	0.00	0.00	0.00	4.65					0.05	4.70	265.9	1.77
Totals for Sample	0.28	1.39	0.00	0.00	0.00	1.67					0.06	1.73		
TOTALS FOR REGION	0.26	1.35	0.00	0.00	0.00	1.61					0.06	1.67		
ALASKA PENINSULA														
Chignik Bay	1.10	1.21	0.00	0.00	0.00	2.31	0.00	0.00	0.00	0.00	0.00	2.31	194.2	1.19
Chignik Lagoon	2.00	5.22	0.00	0.00	0.00	7.22	0.00	0.00	0.00	0.00	0.00	7.22	228.6	3.16
Chignik Lake	0.42	3.88	0.00	0.00	0.13	4.43	0.00	0.00	0.43	0.00	0.43	4.86	283.1	1.72
Cold Bay *	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.04	1.02	0.05	1.11	7.46		
Egegik	0.05	8.86	0.00	0.00	0.00	8.91	0.00	0.05	1.23	0.00	1.29	10.20	386.1	2.64
False Pass	3.38	4.38	0.00	0.00	0.00	7.76	0.00	0.00	1.74	0.00	1.74	9.50	469.7	2.02
Ivanof Bay	5.27	5.08	0.00	0.00	0.00	10.35	0.00	0.00	0.24	0.00	0.24	10.59	441.2	2.40
King Cove*	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.04	1.02	0.05	1.11	7.46		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
King Salmon*	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.00	0.00	0.00	0.00	7.46	220.2	3.39
Naknek *	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.00	0.00	0.00	0.00	7.46	188.3	3.96
Nelson Lagoon	2.24	5.09	0.00	0.00	0.00	7.33	0.00	0.01	0.47	0.10	0.57	7.90	251.8	3.14
Perryville	0.03	1.96	0.00	0.00	0.00	1.99	0.00	0.00	1.11	0.00	1.11	3.10	389.6	0.80
Pilot Point	4.35	3.57	3.82	1.28	0.08	13.1	0.00	0.15	2.14	0.02	2.29	15.39	381.3	4.04
Port Heiden	4.04	3.06	0.35	0.10	0.01	7.56	0.00	0.07	2.94	0.37	3.38	10.94	394.3	2.77
Sand Point *	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.04	1.02	0.05	1.00	7.46		
South Naknek *	1.83	4.02	0.37	0.10	0.03	6.35	0.00	0.00	0.00	0.00	0.00	7.46	267.2	2.79
Ugashik	4.40	6.90	5.40	0.60	0.10	17.4	0.00	1.50	2.00	0.00	3.50	20.90	814.4	2.57
TOTALS for Sample	1.83	4.02	0.37	0.11	0.03	6.36	0.00	0.04	1.02	0.05	1.11	7.47	4909.90	0.15
TOTALS FOR REGION	1.83	4.00	0.38	0.11	0.03	6.35	0.00	0.03	0.69	0.03	0.72	7.08		
BRISTOL BAY														
Aleknagik *	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Bal.of Bristol Bay Census Area*	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Bal.of Dillingham Census Area*	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Clark's Point *	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Dillingham	0.70	1.84	0.04	0.00	0.00	2.58	0.00	0.00	0.01	0.00	0.01	2.59	248.2	1.04
Ekwok	0.52	1.82	0.00	0.08	0.00	2.42	0.00	0.00	0.00	0.00	0.00	2.42	796.8	0.30
Igiugig	1.41	4.71	0.00	0.00	0.00	6.12	0.00	0.10	0.29	0.29	0.66	6.78	614.7	1.10
Iliamna	0.58	0.50	0.00	0.00	0.00	1.08	0.00	0.10	0.34	0.02	0.45	1.53	417.2	0.37
Kokhanok	0.59	2.52	0.18	0.00	0.00	3.29	0.00	0.00	0.36	0.00	0.36	3.65	697.0	0.52
Koliganek	2.37	4.93	0.04	0.84	0.00	8.18	0.02	0.02	0.15	0.00	0.19	8.37	881.4	0.95
Levelock	2.99	3.83	0.66	0.33	0.00	7.81	0.36	0.48	1.48	0.02	2.35	10.15	1558.4	0.65
Manokotak	4.62	3.50	1.93	1.36	0.00	11.41	0.03	0.00	1.20	0.17	1.40	12.81	383.0	3.34
New Stuyahok	0.90	2.20	0.09	0.00	0.00	3.19	0.00	0.00	0.14	0.00	0.14	3.33	701.1	0.47
Newhalen	0.28	1.34	0.00	0.68	0.00	2.30	0.00	0.03	0.83	0.03	0.90	3.19	768.8	0.41
Nondalton	0.99	3.28	0.00	0.33	0.00	4.60	0.00	0.02	0.14	0.06	0.22	4.78	1176.0	0.41
Pedro Bay	0.24	2.73	0.00	0.00	0.00	2.97	0.00	0.03	1.00	0.03	1.07	4.00	865.0	0.46
Port Alsworth	0.96	1.97	0.00	0.00	0.00	2.93	0.00	0.00	0.00	0.00	0.00	2.93	361.0	0.81
Portage Creek *	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Togiak*	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
Twin Hills*	1.16	2.32	0.21	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
TOTALS for Sample	1.16	2.32	0.20	0.20	0.00	3.89	0.01	0.02	0.23	0.02	0.29	4.17		
TOTALS FOR REGION	1.15	2.27	0.20	0.20	0.00	3.83	0.01	0.02	0.24	0.02	0.29	4.12		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
YUKON-KUSKOKWIM DELTA SOUTH COAST														
Eek *	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
Kipnuk*	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
Kongiganak *	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
Kwigillingok *	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
Tuntutuliak	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
Total for Subregion	4.60	7.28	2.91	7.00	1.89	23.68	0.01	0.01	0.01	0.06	0.09	23.68		
ADDITIONAL SOUTH COAST														
Goodnews Bay *	12.14	3.47	0.18	0.39	0.00	16.18	0.01	0.01	0.01	0.06	0.09	16.25		
Platinum*	12.14	3.47	0.18	0.39	0.00	16.18	0.01	0.01	0.01	0.06	0.09	16.25		
Quinhagak	12.14	3.47	0.18	0.39	0.00	16.18	0.01	0.01	0.01	0.06	0.09	16.25	756.0	2.15
Total for Subregion	12.14	3.47	0.18	0.39	0.00	16.18	0.01	0.01	0.01	0.06	0.09	16.25		
MID COAST														
Chefornak *	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Chevak	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Hooper Bay	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Mekoryuk *	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Newtok *	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Nightmute *	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Scammon Bay	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52	787.0	3.12
Toksook Bay *	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
Tununak	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52	1091.1	2.25
Total for Subregion	8.55	6.91	1.82	6.06	1.19	24.52	0.02	0.02	0.02	0.03	0.09	24.52		
NORTH COAST														
Alakanuk *	9.44	3.67	1.74	4.31	0.04	19.21	0.03	0.01	0.00	0.00	0.04	19.21	733.0	4.76
Emmonak	9.44	3.67	1.74	4.31	0.04	19.21	0.03	0.01	0.00	0.00	0.04	19.21	612.0	5.70
Kotlik	9.44	3.67	1.74	4.31	0.04	19.21	0.03	0.01	0.00	0.00	0.04	19.21	510.0	6.84
Sheldon Point *	9.44	3.67	1.74	4.31	0.04	19.21	0.03	0.01	0.00	0.00	0.04	19.21		
Total for Subregion	9.44	3.67	1.74	4.31	0.04	19.21	0.03	0.01	0.00	0.00	0.04	19.21		
LOWER KUSKOKWIM RIVER														
Akiachak *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Akiak *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Aniak	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		

APPENDIX TABLE 4 (CONTINUED) ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RE-RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
Atmautluak *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Kasigluk *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Kwethluk	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Lower Kalskag*	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Napakiak *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Napaskiak *	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Nunapitchuk	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37	801.0	2.54
Oscarville	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Tuluksak	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Upper Kalskag*	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
Total for Subregion	3.22	10.84	0.90	4.86	0.56	20.37	0.00	0.02	0.00	0.00	0.03	20.37		
LOWER YUKON RIVER														
Marshall (Fortuna Ledge)	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72		
Mountain Village	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72	822.0	1.55
Pilot Station*	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72		
Pitka's Point	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72		
Russian Mission	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72	599.0	2.12
Saint Marys (Andreafsky)	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72		
Total for Subregion	3.20	2.84	0.72	5.62	0.34	12.72	0.00	0.01	0.00	0.01	0.02	12.72		
Bethel	0.69	1.89	0.09	0.40	0.05	3.13	0.00	0.00	0.00	0.00	0.00	3.13		
TOTALS FOR REGION	4.67	5.75	1.07	4.07	0.56	16.12	0.01	*0.01	0.00	0.01	0.04	16.16		
UPPER COOK INLET														
Western Susitna	0.45	2.15	0.00	0.00	0.00	2.60					0.00	2.60	213.0	1.22
Tyonek	0.10	1.19	0.00	0.00	0.00	1.29					0.00	1.29	249.3	0.52
Totals for Sample	0.23	1.55	0.00	0.00	0.00	1.78					0.00	0.00		
TOTALS FOR REGION	0.23	1.55	0.00	0.00	0.00	1.79					0.00	1.79		
UPPER KUSKOKWIM														
Bal.of Aniak Census Subarea*	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Bal.of McGrath-Holy Cross CSA	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Chuathbaluk *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Crooked Creek *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Lake Minchumina*	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Lime Village *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		

APPENDIX TABLE 4 (CONTINUED) ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
McGrath	2.70	4.04	0.67	0.00	0.00	7.41					0.00	7.41	181.9	4.07
Nikolai	5.42	10.17	1.40	0.00	0.00	16.99					0.00	16.99	786.6	2.16
Red Devil *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Sleetmute *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Sparrevohn Air Force Base *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Stony River *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Takotna *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Tatalina Station CDP*	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Telida *	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
Total for Sample	3.15	5.06	0.79	0.00	0.00	9.00					0.00	9.00		
TOTALS FOR REGION	3.18	5.13	0.80	0.00	0.00	9.11					0.00	9.11		
UPPER YUKON-KOYUKUK-LOWER TANANA														
Allakaket	14.53	12.58	0.44	0.33	0.00	27.88					0.00	27.88		
Anvik *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Arctic Village *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Bal.of Koyukuk-Mid Yukon CSA	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Bal of. Yukon Flats CensusSA*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Beaver	32.33	12.48	0.72	0.00	0.00	45.53					0.00	45.53	732.1	6.22
Bettles	0.89	1.34	0.00	0.00	0.00	2.23					0.00	2.23		
Birch Creek *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Campion Station *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Central *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Chalkyitsik *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Chicken *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Circle*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Eagle *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Eagle Village*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Fort Yukon	17.88	11.36	0.36	0.28	0.00	29.88					0.00	29.88	1048.5	2.85
Galena	3.40	2.19	0.11	0.00	0.00	5.70					0.00	5.70	787.0	0.72
Grayling *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Holy Cross *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Hughes	14.04	9.34	0.00	0.00	0.00	23.38					0.00	23.38	1498.0	1.56
Huslia	23.54	8.20	0.48	0.00	0.00	32.22					0.00	32.22	1082.0	2.98
Indian Mountain CDP*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Kaltag *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Koyukuk *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
Manley Hot Springs *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Minto	14.15	11.22	0.00	0.00	0.00	25.37					0.00	25.37	1015.0	2.50
Nenana *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Nulato*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Rampart *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Ruby *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Shageluk *	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Stevens Village	8.78	7.37	1.00	0.00	0.00	17.15					0.00	17.15	1138.7	1.51
Tanana	7.20	3.50	0.10	0.00	0.00	10.80					0.00	10.8	801.1	1.35
Venetie*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Wiseman*	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
Totals for Sample	11.92	7.17	0.26	0.09	0.00	19.44					0.00	19.44		
TOTALS FOR REGION	11.74	7.01	0.25	0.09	0.00	19.09					0.00	19.09		
SEWARD-NORTON SOUND														
Bal.of Nome Census Area*	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Brevig Mission	14.50	3.00	0.20	0.20	0.00	17.90	0.02	0.15	0.23	0.16	0.57	18.47	579.0	3.19
Elim *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Golovin	9.78	5.17	3.76	1.24	0.00	19.95	0.04	0.04	0.48	0.23	0.74	20.69	604.0	3.43
Koyuk *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Nome *	6.03	2.83	1.80	0.31	0.00	10.97	0.00	0.00	0.01	0.00	0.02	10.99		
Port Clarence *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Saint Michael *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Shaktoolik *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Shishmaref	6.10	3.85	0.23	0.00	0.00	10.18	0.00	0.14	0.59	0.01	0.74	10.92	663.0	1.65
Stebbins	24.13	11.59	11.11	2.06	0.00	48.89	0.00	0.00	0.00	0.00	0.00	48.89	1012.0	4.83
Teller *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Unalakleet *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
Wales *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
White Mountain *	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
TOTALS for Sample	13.39	6.29	4.01	0.69	0.00	24.37	0.01	0.09	0.34	0.06	0.49	24.83		
TOTALS FOR REGION	9.93	4.66	3.01	0.54	0.00	18.13	0.00	0.05	0.18	0.03	0.26	18.38		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
BERING STRAITS														
Diomede														
Gambell														
Savoonga														
TOTALS FOR REGION														
NORTHWEST														
Ambler*	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Bal.of Northwest Arctic Bor. *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Buckland *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Deering *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Kiana *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Kivalina	2.27	0.77	0.02	0.00	0.32	3.38	0.00	0.00	0.01	0.22	0.22	3.60	968.0	0.37
Kobuk *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Kotzebue	2.53	2.59	0.05	0.00	0.00	5.17					0.47	5.64	404.3	1.40
Noatak *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Noorvik *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Selawik *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Shungnak *	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
Totals for Sample	2.51	2.42	0.05	0.00	0.03	5.01					0.45	5.45		
TOTALS FOR REGION	2.51	2.42	0.05	0.00	0.03	5.00					0.45	5.45		
ARCTIC SLOPE														
Anatuvuk Pass*	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Atqasuk*	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Bal.of Barrow-Point Hope CSA*	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Bal. Prudhoe Bay-Kaktovik CSA	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Barrow	4.70	2.10	0.00	0.00	0.00	6.80					0.40	7.20	195.6	3.68
Cape Lisburne*	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Deadhorse*	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00		
Kaktovik	15.50	2.53	0.00	0.00	0.00	18.03					0.40	18.43	328.0	5.62
Nuiqsut	15.11	1.42	0.00	0.00	0.00	16.53					0.10	16.63	400.0	4.16
Point Hope*	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
Point Lay	27.04	9.65	0.00	0.00	0.04	36.73					1.23	37.96	740.8	5.12
Prudhoe Bay*	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00		
Wainwright	11.20	1.70	0.00	0.00	0.00	12.90					0.40	13.30	506.6	2.63
Totals for Sample	7.50	2.23	0.00	0.00	0.00	9.73					0.40	10.13		
TOTALS FOR REGION	7.27	2.13	0.00	0.00	0.00	9.40					0.39	9.79		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
COPPER RIVER BASIN														
Chistochina	0.15	0.35	0.78	0.00	0.00	1.28					0.00	1.28	261.2	0.49
Chitina	0.06	0.49	0.00	0.00	0.00	0.55					0.00	0.55	340.1	0.16
Copper Center	0.22	0.26	0.18	0.00	0.00	0.66					0.00	0.66	173.3	0.38
East Glenn Highway	0.07	0.46	0.93	0.00	0.00	1.46					0.00	1.46	132.7	1.10
Gakona	0.00	0.47	0.00	0.00	0.00	0.47					0.00	0.47	95.3	0.49
Glennallen	0.00	0.05	0.00	0.00	0.00	0.05					0.00	0.05	99.5	0.05
Gulkana	0.39	0.54	0.00	0.00	0.00	0.93					0.00	0.93	152.3	0.61
Kenny Lake	0.00	0.20	0.00	0.00	0.00	0.20					0.00	0.20	136.1	0.15
Lake Louise	0.00	0.26	0.00	0.00	0.00	0.26					0.00	0.26	179.6	0.14
McCarthy	0.00	0.95	0.00	0.00	0.00	0.95					0.00	0.95	230.2	0.41
Mentasta	0.00	0.60	0.00	0.00	0.00	0.60					0.00	0.60	125.6	0.48
Mentasta Pass	0.00	1.46	0.00	0.50	0.00	1.96					0.00	1.96	190.9	1.03
Nabesna Road	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	248.9	0.00
North Slana Homestead	0.00	0.15	0.00	0.00	0.00	0.15					0.00	0.15	174.4	0.09
Paxson	0.31	6.69	3.18	0.00	0.00	10.18					0.00	10.18	287.3	3.54
Slana	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	248.5	0.00
Sourdough	0.00	0.54	0.00	0.00	0.00	0.54					0.00	0.54	115.2	0.47
South Slana Homestead	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	121.4	0.00
South Wrangell Mountains	0.21	0.27	0.00	0.00	0.00	0.48					0.00	0.48	137.9	0.35
Tazlina	0.06	0.13	0.27	0.00	0.00	0.46					0.00	0.46	106.9	0.43
Tonsina	0.01	0.26	0.00	0.00	0.00	0.27					0.00	0.27	155.9	0.17
West Glenn Highway	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	91.7	0.00
TOTALS FOR REGION	0.06	0.30	0.17	0.00	0.00	0.53					0.00	0.53		
PARKS HIGHWAY														
Anderson	0.02	1.10	0.02	0.00	0.00	1.14					0.00	1.15	139.1	0.83
Cantwell	0.00	0.32	0.00	0.00	0.00	0.32					0.00	0.32	111.3	0.29
Chase	0.06	0.41	0.00	0.00	0.00	0.47					0.00	0.47	209.2	0.22
Gold Creek	0.00	1.50	0.00	0.00	0.00	1.50					0.00	1.50	174.0	0.86
Healy	0.14	0.40	0.02	0.00	0.00	0.56					0.00	0.57	132.1	0.43
Hurricane-Broad Pass	0.00	0.34	0.00	0.00	0.00	0.34					0.00	0.34	178.0	0.19
McKinley Park Village	0.45	0.57	0.09	0.00	0.00	1.11					0.00	1.11	241.7	0.46
Totals for Sample	0.11	0.65	0.02	0.00	0.00	0.79					0.00	0.79		
TOTALS FOR REGION	0.08	0.72	0.02	0.00	0.00	0.82					0.00	0.82		

APPENDIX TABLE 4 (CONTINUED)

ESTIMATED POUNDS PER CAPITA OF MIGRATORY BIRDS AND EGGS HARVESTED, BY RURAL ALASKA COMMUNITY, EXPANDED TO 1985 COMMUNITY POPULATIONS

	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL BIRDS	GOOSE EGGS	DUCK EGGS	GULL EGGS	OTHER EGGS	TOTAL EGGS	TOTAL MIGRATORY BIRDS/ EGGS	SUBSIS HARVEST ALL RESOURCES	PERCENT BIRDS & EGGS OF TOTAL HARVEST
UPPER TANANA														
Chisana	0.00	0.23	0.00	0.00	0.00	0.23					0.00	0.23	128.0	0.18
Dot Lake	0.00	0.55	0.00	0.00	0.00	0.55					0.00	0.55	114.5	0.48
Healy Lake *	0.19	2.55	0.09	0.00	0.00	2.83					0.01	2.84		
Northway	0.79	5.89	0.04	0.00	0.00	6.72					0.00	6.72	278.1	2.42
Tanacross	0.41	1.69	0.00	0.00	0.00	2.10					0.02	2.12	250.4	0.85
Tetlin	0.02	5.08	0.00	0.00	0.00	5.10					0.02	5.12	213.5	2.40
Tok	0.03	1.50	0.13	0.00	0.00	1.66					0.00	1.66	149.2	1.12
TOTAL for Sample	0.19	2.55	0.09	0.00	0.00	2.83					0.01	2.84		
TOTALS FOR REGION	0.22	2.54	0.08	0.00	0.00	2.83					0.01	2.84		

* Unsurveyed communities for which harvests were extrapolated from surveyed communities.

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
SOUTHEAST ARCHIPELAGO																												
Angoon	7.7	9.9			.7	9.9		6.2	7.7			.0	7.7	.0	5.5	.7				6.2	.0	2.2	2.9			.7	3.7	.7
Beecher Pass	20.0	80.0			.0	80.0		20.0	80.0			.0	80.0	.0	20.0	60.0			.0	60.0	.0	.0	.0			.0	.0	.0
Cape Pole	37.5	37.5			12.5	50.0		25.0	37.5			12.5	37.5	.0	.0	12.5			.0	12.5	.0	25.0	.0			.0	25.0	.0
Coffman Cove	10.5	10.5			1.6	15.1		7.5	8.9			.0	10.5	.0	.0	.0			.0	.0	.0	3.0	4.6			1.6	7.5	.0
Craig	6.2	10.7			2.1	12.7		4.1	5.1			2.1	6.2	.0	.0	1.0			.0	1.0	.0	2.1	6.6			.0	7.6	.0
Edna Bay	35.0	35.0			20.0	55.0		30.0	35.0			20.0	50.0	5.0	5.0	5.0			15.0	20.0	.0	10.0	5.0			5.0	20.0	.0
Elfin Cove	.0	.0			.0	.0		.0	.0			.0	.0	.0	.0	.0			.0	.0	.0	.0	.0			.0	.0	.0
Gustavus	11.4	21.0			1.8	22.8		7.3	21.0			1.8	22.5	.0	1.8	11.8			.0	13.6	.0	4.1	.0			.0	4.1	.0
Haines	.0	19.1			2.5	19.1		.0	13.9			2.5	13.9	.0	.0	2.7			2.5	2.7	.0	.0	8.1			2.5	8.1	.0
Hollis	9.1	23.2			7.1	23.2		9.1	20.2			7.1	20.2	.0	3.0	4.1			.0	7.1	.0	.0	6.0			.0	6.0	.0
Hoonah	17.2	26.3			5.1	26.3		11.6	17.7			2.5	17.7	3.0	5.6	6.1			.0	8.6	.5	5.6	9.1			2.5	9.1	3.5
Hydaburg	3.0	8.9			.0	10.4		3.0	6.0			.0	7.5	10.4	.0	1.5			.0	1.5	1.5	.0	3.0			.0	3.0	13.4
Hyder	24.3	27.3			6.1	30.3		24.2	27.3			6.1	30.3	.0	3.0	3.0			.0	6.1	.0	3.0	3.0			.0	3.0	.0
Kake	2.3	23.7			.0	23.7		1.5	10.8			.0	10.8	.0	.0	1.5			.0	1.5	.0	.8	15.8			.0	15.8	.0
Kasaan	.0	14.3			.0	14.3		.0	14.3			.0	14.3	.0	.0	7.1			.0	7.1	.0	.0	.0			.0	.0	.0
Klawock	10.8	11.2			.0	15.3		6.7	8.9			.0	11.2	7.5	1.1	3.3			.0	3.3	1.1	4.1	2.2			.0	5.3	5.6
Klukwan	2.5	16.2			.0	16.2		2.5	7.1			.0	7.1	.0	2.5	2.5			.0	2.5	.0	.0	9.1			.0	9.1	.0
Metlakatla	18.2	15.6			3.4	21.6		12.5	12.8			.6	15.9	.0	6.5	12.2			.6	12.5	.0	5.7	9.1			2.8	14.8	.0
Meyers Chuck	20.0	20.0			10.0	20.0		20.0	20.0			10.0	20.0	.0	.0	.0			.0	.0	.0	10.0	10.0			.0	10.0	.0
North Whale Pass	11.1	27.8			.0	27.8		11.1	22.2			.0	22.2	.0	.0	.0			.0	.0	.0	5.6	5.6			.0	11.1	.0
Pelican	16.7	28.6			4.0	32.6		10.0	19.1			4.0	20.3	2.4	5.2	3.6			1.2	6.4	2.4	6.7	9.5			.0	12.3	8.3
Petersburg	31.4	35.4			2.1	39.1		24.3	29.6			2.2	30.7	.0	8.4	5.3			.0	8.4	.0	7.3	9.5			.0	13.7	.0
Point Baker	26.3	36.8			.0	36.8		21.1	31.6			.0	31.6	.0	10.5	10.5			.0	15.8	.0	5.3	5.3			.0	5.3	.0
Port Protection	28.0	28.0			8.0	32.0		16.0	12.0			4.0	16.0	.0	.0	4.0			.0	4.0	.0	12.0	20.0			4.0	20.0	.0
Port Alexander	5.7	11.7			.0	14.8		5.7	11.7			.0	14.8	.0	.0	.0			.0	.0	.0	.0	.0			.0	.0	.0
Saxman	3.3	3.3			3.3	3.3		3.3	3.3			3.3	3.3	.0	.0	.0			.0	.0	.0	.0	.0			.0	.0	.0
Sitka	.0	.0			.0	6.1		2.4	6.1			1.0	6.1	.0	.0	.0			.0	.0	.0	.0	.0			.0	.0	.0
Skagway	4.7	5.7			.0	8.2		2.6	3.6			.0	6.2	.0	.0	.5			.0	.5	.0	2.1	2.1			.0	2.1	.0
Tenakee Springs	22.5	32.2			6.4	32.2		16.1	25.8			6.4	25.8	.0	.0	19.3			3.2	19.3	.0	6.4	9.7			.0	9.7	3.2
Thorne Bay	13.8	31.9			4.0	33.0		10.9	19.9			4.0	21.0	.0	2.9	2.9			.0	5.8	.0	2.9	14.9			.0	14.9	.0
Wrangell	14.1	23.3			1.6	25.0		11.7	16.1			1.6	17.0	.0	6.2	13.5			.8	14.3	.0	3.1	11.2			.0	12.7	.0
Yakutat	26.7	43.0			10.9	47.4		3.9	29.5			7.3	29.5	9.1	6.0	11.9			3.6	19.9	6.7	23.6	26.7			3.6	36.3	19.4

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
PRINCE WILLIAM SOUND																												
Chenega Bay	13.3	56.3	.0			62.5	6.3	6.7	62.5	.0			62.5	6.3	.0	25.0				25.0	6.3	6.7	18.8				25.0	.0
Cordova	11.7	27.7	1.0			32.0	2.4	7.3	22.3	.5			24.3	2.4	.5	2.9	.0			3.4	1.0	4.4	8.7	.5			11.7	.0
San Juan Bay		50.0				50.0			50.0				50.0			33.3				33.3			16.7				16.7	
Tatitlek	21.1	73.7	5.3			73.7	47.4	10.5	47.4	.0			47.4	31.6	5.3	36.8	.0			36.8	26.3	15.8	36.8	5.3			42.1	36.8
LOWER KENAI PENINSULA																												
English Bay	3.0	60.6			36.4	60.6	27.3	.0	36.4			24.2	39.4	15.2	.0	21.2			21.2	33.3	12.1	.0	39.4			21.2	42.4	21.2
Port Graham	.0	46.3				51.9	13.0	.0	31.5				35.2	5.6	.0	18.5				20.4	1.9	.0	24.1				27.8	9.3
Seldovia	8.6					8.6		8.6	5.7				8.6									8.6					8.6	
KODIAK ISLAND																												
Akhiok	71.4	100.0				100.0	85.7	66.7	95.2				95.2	90.5														
Chiniak	17.6	23.5				29.4	11.8	5.9	17.6				17.6	11.8														
Karluk	20.0	85.0				85.0	55.0	10.0	75.0				75.0	30.0														
Kodiak City	1.9	14.8				14.8	3.2	1.3	10.3				10.3	2.6														
Kodiak CGStation	1.3	3.9				5.3	.0	1.3	3.9				5.3	.0														
Larsen Bay	3.1	71.9				71.9	43.8	3.1	50.0				50.0	25.0														
Old Harbor	19.7	88.2				89.5	63.2	19.7	80.3				81.6	59.2														
Ouzinkie	12.5	87.5				90.6	65.6	6.3	68.8				68.8	50.0														
Port Lions	.0	76.4				76.4	20.0	1.8	58.2				60.0	12.7														
ALASKA PENINSULA																												
Chignik Bay	42.1	52.6	.0		.0	68.4	5.3	31.6	31.6	.0		.0	47.4	.0	15.8	.0	.0		.0	15.8	.0	15.8	26.3	.0		.0	36.8	5.3
Chignik Lagoon	41.2	82.4	.0		.0	82.4	.0	35.3	47.1	.0		.0	52.9	.0	17.6	17.6	.0			17.6	.0	5.9	41.2	.0		.0	41.2	.0
Chignik Lake	39.1	87.0	.0		8.7	87.0	65.2	26.1	60.9	.0		4.3	60.9	21.7	13.0	47.8	.0		.0	47.8	17.4	21.7	60.9	.0		4.3	65.2	47.8
Egegik	4.0	56.0	.0		4.0	56.0	40.0	4.0	52.0	.0		4.0	52.0	32.0	.0	28.0	.0		.0	28.0	32.0	4.0	16.0	.0		.0	20.0	16.0
False Pass	75.0	80.0	.0	.0	.0	85.0	65.0	35.0	40.0	.0	.0	.0	50.0	25.0	20.0	35.0	.0	.0	.0	40.0	25.0	55.0	50.0	.0	.0	.0	75.0	50.0
Ivanof Bay	83.3	100.0	.0	.0	.0	100.0	33.3	66.7	66.7	.0	.0	.0	83.3	33.3	50.0	33.3	.0	.0	.0	50.0	16.7	50.0	50.0	.0	.0	.0	50.0	16.7
Nelson Lagoon	38.5	76.9				76.9	38.5	30.8	69.2				69.2	38.5	30.8	38.5				46.2	38.5	15.4	30.8				30.8	7.7
Perryville	30.0	95.0	.0		.0	95.0	80.0	5.0	55.0	.0		.0	55.0	45.0	.0	20.0	.0		.0	20.0	25.0	25.0	70.0	.0		.0	70.0	65.0
Pilot Point	76.5	82.4	41.2	11.8	11.8	88.2	52.9	58.8	70.6	35.3	11.8	11.8	76.5	47.1	17.6	23.5	5.9	.0	.0	23.5	17.6	23.5	17.6	5.9	5.9	5.9	23.5	5.9
Port Heiden	43.2	73.0	13.5	.0	2.7	75.7	59.5	24.3	43.2	8.1	.0	2.7	45.9	59.5	16.2	24.3	2.7	.0	.0	24.3	32.4	21.6	45.9	5.4	.0	.0	51.4	5.4
Ugashik	60.0	100.0	60.0	20.0	20.0	100.0	80.0	60.0	80.0	60.0	20.0	20.0	80.0	80.0	20.0	40.0	40.0	.0	.0	40.0	20.0	20.0	20.0	.0	.0	.0	40.0	.0

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
BRISTOL BAY																												
Dillingham	17.6	27.5	2.0	.0		31.4	13.7	9.8	21.6	1.3	.0		22.9	9.2	4.6	9.2	.7	.0		11.1	5.2	9.2	11.8	1.3	.0		15.0	9.8
Ekwok	20.7	51.7	.0	3.4		55.2	.0	13.8	37.9	.0	3.4		41.4	.0	13.8	10.3	.0	3.4		20.7	.0	13.8	13.8	.0	.0		20.7	.0
Igiugig								66.7	66.7	.0	.0		66.7	66.7								.0	.0	.0	.0		.0	.0
Iliamna								5.0	10.0	.0	.0		10.0	15.0								.0	.0	.0	.0		.0	.0
Kokhanok								10.5	47.4	5.3	.0		47.4	36.8								5.3	10.5	.0	.0		10.5	5.3
Koliganek	52.4	73.8	4.8	28.6		78.6	26.2	42.9	61.9	2.4	23.8		66.7	16.7	35.7	47.6	.0	16.7		52.4	4.8	21.4	31.0	2.4	4.8		35.7	14.3
Levelock	48.1	66.7	7.4	7.4		70.4	59.3	37.0	48.1	7.4	7.4		51.9	44.4	25.9	51.9	7.4	3.7		59.3	33.3	33.3	44.4	3.7	3.7		51.9	33.3
Manokotak	59.3	81.5	44.4	38.9		94.4	83.3	51.9	68.5	42.6	31.5		88.9	64.8	27.8	51.9	18.5	14.8		63.0	42.6	24.1	38.9	13.0	11.1		50.0	46.3
New Stuyahok	55.0	72.5	2.5	2.5		80.0	7.5	45.0	60.0	2.5	2.5		67.5	5.0	10.0	22.5	2.5	.0		22.5	2.5	15.0	25.0	.0	.0		25.0	5.0
Newhalen								9.1	18.2	.0	18.2		18.2	63.6								.0	.0	.0	.0		.0	.0
Nondalton								38.1	57.1	.0	9.5		57.1	28.6								.0	.0	.0	.0		.0	.0
Pedro Bay								5.9	35.3	.0	.0		35.3	64.7								.0	.0	.0	.0		.0	.0
Port Alsworth								23.1	23.1	.0	.0		23.1	.0								.0	.0	.0	.0		.0	.0
YUKON-KUSKOKWIM DELTA																												
Alakanuk								85.7	85.7	71.4	66.7		85.7															
Emmonak								88.9	88.9	44.4	27.8		88.9															
Kotlik								92.9	85.7	85.7	50.0		92.9															
Kwethluk								36.8	68.5	17.0	35.4		68.5		23.2	37.3	9.2	9.2		39.7		33.5	60.7	8.7	30.6		64.1	
Mountain Village								87.5	81.3	31.3	37.5		87.5															
Nunapitchuk								82.4	88.2	58.8	41.2		88.2	35.3														
Quinhagak								75.0	58.3	8.3	16.7		83.3															
Sheldon Point								83.3	100.0	66.7	83.3		100.0															
Stebbins								91.7	83.3	83.3	33.3		91.7															
Tununak	100.0	100.0	90.9	90.9	87.9	100.0	75.8	69.7	81.8	30.3	45.5	57.6	87.9	24.2	42.4	39.4	12.1	18.2	9.1	54.5	15.2	57.6	54.5	18.2	15.2	15.2	72.7	30.3
UPPER COOK INLET																												
Western Susitna								14.0	25.0				25.0															
Tyonek								7.0	36.0				36.0		3.0	8.0				8.0		.0	10.0				10.0	

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
UPPER YUKON-KOYUKUK-LOWER TANANA																												
Allakaket								77.1	80.0				80.0									2.8	5.7				5.7	
Beaver								71.0	74.2	12.9			83.9		48.4	41.9	.0			54.8		41.9	41.9	9.7			45.2	
Bettles								10.0	15.0				15.0									5.0	5.0				5.0	
Fort Yukon	77.9	85.9	6.7	2.3		86.4		57.0	64.9	6.7	2.3		66.6		46.9	52.1	5.0	1.1		58.8		49.6	43.9	.0	.0		58.6	
Galena	50.0	60.8	2.7	.0		70.3		31.1	44.6	4.1	.0		47.3		5.4	4.1	1.4	.0		9.5		18.9	16.2	.0	.0		24.3	
Hughes								73.7	78.9				78.9									47.4	26.3				47.4	
Huslia								64.3	69.6	17.8			69.6									25.0	21.4	1.8			25.0	
Minto								64.0	82.0				82.2															
Nenana		96.0				96.0			77.0				77.0															
Stevens Village								73.3	70.0	13.3			80.0		13.3	26.7	.0			26.7		10.0	13.3				16.7	
Tanana	59.4	55.0	3.4			64.6	.0	45.4	36.7	3.4			45.4	.0	15.9	15.9	3.4			18.7	.0	22.7	22.1	.0			30.8	.0
SEWARD PENINSULA-NORTON SOUND																												
Brevig Mission	80.0	73.3	13.3	6.7	.0	53.3	60.0	73.3	66.7	13.3	6.7	.0	80.0	60.0	60.0	40.0	6.7	.0	.0	73.3	33.3	26.7	13.3	6.7	.0	.0	40.0	26.7
Golovin	97.0	81.8	.0	24.2	3.0	97.0	33.3	72.7	69.7	.0	21.2	3.0	78.8	33.3	36.4	30.0	.0	6.1	.0	51.5	15.2	45.5	33.3	.0	3.0	.0	51.5	9.1
Shishmaref	76.2	66.7	19.0	14.3	.0	76.2	57.1	38.1	42.9	4.8	.0	.0	47.6	33.3	33.3	14.3	4.8	.0	.0	38.1	33.3	52.4	38.1	19.0	14.3	.0	52.4	38.1
Stebbins								91.7	83.3	83.3	33.3		91.7															
NORTHWEST																												
Kotzebue	42.3	49.6	1.5			51.9	15.9	31.0	37.8	1.5			38.6	8.2	11.5	18.8	.0			20.0	6.7	12.8	13.9	.0			16.5	7.8
ARCTIC SLOPE																												
Barrow *								17.6	19.0				32.7															
Kaktovik	71.4	73.8				83.3		57.1	50.0				71.4		38.1	31.0				47.6		42.9	50.0				57.1	
Nuiqsut	90.0	45.0				90.0	25.0	85.5	25.0				85.5	22.5	55.0	17.5				60.0	7.5	47.5	30.0				55.0	10.0
Point Lay	85.3	76.5			3.4	88.7	66.6	68.3	65.2			3.4	77.4	54.2	49.7	51.9			.0	67.5	43.9	49.6	26.9			.0	49.6	22.7
Wainwright *								40.4	29.8				53.0															

*Data from study in process by S.R.Braund for U.S. MMS

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
COPPER RIVER BASIN																												
Chistochina	3.6	7.1	3.6	.0		7.1	.0	3.6	7.1	3.6	.0		7.1	.0	3.6	3.6	3.6	.0		3.6	.0	.0	.0	.0	.0		.0	.0
Chitina	5.6	5.6	.0	.0		5.6	.0	5.6	5.6	.0	.0		5.6	.0	5.6	5.6	.0	.0		5.6	.0	.0	.0	.0	.0		.0	.0
Copper Center	4.7	6.3	4.7	.0		6.3	.0	4.7	6.3	4.7	.0		6.3	.0	4.7	4.7	4.7	.0		4.7	.0	.0	.0	.0	.0		.0	.0
East Glenn Highway	10.0	16.7	10.0	.0		16.7	.0	10.0	16.7	10.0	.0		16.7	.0	10.0	10.0	10.0	.0		10.0	.0	.0	.0	.0	.0		.0	.0
Gakona	.0	8.7	.0	.0		8.7	.0	.0	8.7	.0	.0		8.7	.0	.0	8.7	.0	.0		8.7	.0	.0	.0	.0	.0		.0	.0
Glennallen	.0	4.1	.0	.0		4.1	.0	.0	3.1	.0	.0		3.1	.0	.0	.0	.0	.0		.0	.0	.0	1.0	.0	.0		1.0	.0
Gulkana	5.0	20.0	.0	.0		25.0	.0	5.0	10.0	.0	.0		15.0	.0	5.0	5.0	.0	.0		10.0	.0	.0	10.0	.0	.0		10.0	.0
Kenny Lake	.0	4.9	.0	.0		4.9	.0	.0	4.9	.0	.0		4.9	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
Lake Louise	.0	5.9	.0	.0		5.9	.0	.0	5.9	.0	.0		5.9	.0	.0	5.9	.0	.0		5.9	.0	.0	.0	.0	.0		.0	.0
McCarthy	5.9	11.8	.0	.0		11.8	.0	.0	11.8	.0	.0		11.8	.0	.0	5.9	.0	.0		5.9	.0	5.9	5.9	.0	.0		5.9	.0
Mentasta	12.5	29.2	.0	.0		29.2	.0	5.3	36.8	.0	.0		12.5	.0	.0	12.5	.0	.0		12.5	.0	12.5	20.8	.0	.0		20.8	.0
Mentasta Pass	10.0	30.0	.0	10.0		30.0	.0	.0	20.0	.0	10.0		20.0	.0	.0	10.0	.0	.0		10.0	.0	10.0	10.0	.0	.0		10.0	.0
Nabesna Road	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
N Slana Homestead	.0	12.5	.0	.0		12.5	.0	.0	12.5	.0	.0		12.5	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
Paxson	14.3	42.9	14.3	.0		42.9	.0	14.3	42.9	14.3	.0		42.9	.0	7.1	21.4	7.1	.0		21.4	.0	.0	.0	.0	.0		.0	.0
Sourdough	.0	22.2	.0	.0		22.2	.0	.0	11.1	.0	.0		11.1	.0	.0	11.1	.0	.0		11.1	.0	.0	11.1	.0	.0		11.1	.0
Slana	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
S Slana Homestead	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
S Wrangell Moutain	7.1	7.1	.0	0		7.1	.0	7.1	7.1	.0	.0		7.1	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
Tazlina	1.9	6.7	1.9	0		6.7	.0	1.9	6.7	1.9	.0		6.7	.0	1.9	1.9	1.9	.0		3.8	.0	.0	1.9	.0	.0		1.9	.0
Tonsina	1.4	9.6	.0	0		9.6	.0	1.4	9.6	.0	.0		9.6	.0	.0	1.4	.0	.0		1.4	.0	.0	.0	.0	.0		.0	.0
West Glenn Highway	.0	.0	.0	0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
PARKS HIGHWAY																												
Anderson	1.1	12.9	1.1			12.9		1.1	10.4	1.1			10.4		.0	3.6	.0			3.6		.0	2.5	.0			2.5	
Cantwell	.0	4.7						.0	4.7																			
Chase	5.9	11.8				11.8		5.9	11.8				11.8		.0	.0				.0		.0	.0				.0	
Gold Creek		40.0				40.0			20.0				20.0		.0	.0				.0		.0	.0				.0	
Healy	3.7	9.9	1.2			11.1		3.7	7.4	1.2			8.6		.0	.0	.0			.0		.0	3.7	.0			3.7	
Hurricane-Broad Pass		12.5				12.5			12.5				12.5		.0	.0				.0		.0	.0				.0	
McKinley Park Village	1.6	4.7	1.6			4.7		1.6	3.1	1.6			3.1		.0	.0	.0			.0		.0	1.6	.0			1.6	

APPENDIX TABLE 5. PERCENT OF HOUSEHOLDS USING, HARVESTING, GIVING AND RECEIVING MIGRATORY BIRDS AND EGGS BY ALASKA COMMUNITY

	USE							HARVEST							GIVE							RECEIVE						
	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS	GEESE	DUCKS	CRANES	SWANS	OTHER	BIRDS	EGGS
UPPER TANANA																												
Chisana	.0	16.7	.0	.0		16.7	.0	.0	16.7	.0	.0		16.7	.0	.0	.0	.0	.0		.0	.0	.0	.0	.0	.0		.0	.0
Dot Lake	.0	46.7	.0	.0		46.7	.0	.0	26.7	.0	.0		26.7	.0	.0	26.7	.0	.0		26.7	.0	.0	33.3	.0	.0		33.3	.0
Northway	17.8	68.9	2.2	.0		71.1	.0	17.8	60.0	2.2	.0		62.2	.0	11.1	22.2	.0	.0		22.2	.0	6.7	17.8	.0	.0		20.0	.0
Tanacross	25.9	51.9	.0	.0		55.6	3.7	18.5	40.7	.0	.0		44.4	3.7	3.7	29.6	.0	.0		29.6	.0	7.4	14.8	.0	.0		14.8	.0
Tetlin	4.8	79.3	.0	.0		79.3	4.8	4.8	49.7	.0	.0		49.7	4.8	.0	24.8	.0	.0		24.8	.0	.0	40.0	.0	.0		40.0	.0
Tok	5.2	19.5	.9	.0		22.5	.5	5.2	19.0	.9	.0		22.0	.5	.9	4.1	.0	.0		4.1	.5	3.0	1.8	.0	.0		4.8	.0

APPENDIX
TABLE 6

MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES AND YEAR, FOR SELECTED ALASKA COMMUNITIES

STUDY YR	BBLR AA CK T	LCEA SN SA ED RA	CACA CA KN LA ID NA	COA TN HA ED RA	EMPE RO R	SNOW	WFHR IO TN ET	OGTE HE SE RE	SWAN	CRAN E	PINTAIL	MALLARD	GADWALL	WIGEON	SHOVELE L	TEAL
LOWER KENAI PENINSULA																
English Bay 87	0	0	0	0	0	0	0	0	0	0	0	109	0	0		0
Port Graham 87	0	0	0	0	0	0	0	0	0	0	21	128	0	6		13
PRINCE WILLIAM SOUND																
Tatitlek 88								21	0	0	0	23	0	0		0
ALASKA PENINSULA																
Chignik Bay 84	0			15	29	0	0	0		0						
Chignik Lagoon 84	8			0	39	0	0	3		0						
Chignik Lake 84	8			0	13	0	0	0		0						
Egegik 84	0			0	0	0	0	2		0						
False Pass 88	73			62	29				0	0	62	125	22	2	0	263
Ivanof Bay 84	0			25	30	0	0	10		0						
Nelson Lagoon 87	0	0	0	0	61	0	0				100	127	0	1	0	109
Perryville 84	0			0	0	1	0	0		0						
Pilot Point 87	1			28	65	6	22	11	14	41	83	98	26	1		124
Port Heiden 87	25			21	134	0	9	2	0	6	90	120	0	25		90
Ugashik 87	0			6	10	0	5	0	1	9	30	23	0	11		48
BRISTOL BAY																
Dillingham 84				209	82	50		9	0	14						
Ekwok 87	0	4	7		0		7	13	1	0	52	106				
Koliganek 87	8	78	88		19		35	17	19	1	417	467				
Levelock 89	20	27	18		2		66		4	10	156	166				
New Stuyahok 87	0	52	102		0		0	52	2	6	233	298				
YUKON KUSKOKWIM DELTA																
South Coast 87	0	739	437		50	0	672		974	504	2486	336	118	17	101	487
Mid Coast 87	826	490	424		909	2928	730		1718	643	3000	2458	496	234	826	504
North Coast 87	24	634	812		75	1918	571		698	351	2411	335	951	32	172	259
Lower Kuskokwim Rive 87	176	1547	853		170	14	1193		1974	456	6588	4412	554	1978	927	1986
Lowr Yukon River 87	4	866	372		82	200	422		1187	189	1710	851	371	325	245	516
Bethel 87	0	221	320		65	142	133		170	48	1345	681	137	212	125	511
COPPER RIVER BASIN																
Chistochina 87				10			0	0	0	10	0	16		8	0	21
Chitina 87				2			0	0	0	0	0	11		0	0	8
Copper Center 87				0			45	0	0	0	15	25		98	15	15
East Glenn Highway 87				13			0	0	0	33	2	49		13	0	47
Gakona 87				0			0	0	0	0	0	56		0	0	25
Glennallen 87				0			0	0	0	0	0	12		7	0	12
Gulkana 87				22			0	0	0	0	0	36		0	0	0
Kenny Lake 87				0			0	0	0	0	45	0		22	0	11
Lake Louise 87				0			0	0	0	0	0	2		0	0	0
McCarthy 87				0			0	0	0	0	4	20		7	1	6
Mentasta 87				0			0	0	0	0	0	23		0	0	0
Mentasta Pass 87				0			0	0	2	0	0	7		0	7	6

APPENDIX
TABLE 6.
(CONTINUED)

MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES AND YEAR, FOR SELECTED ALASKA COMMUNITIES

	STUDY YR	BBLACK	LCASED	CACKLA	COATHED	EMPEROR	SNOW	WFHRIOTET	OGTESE	SWAN	CRANE	PINTAIL	MALLARD	GADWALL	WIGEON	SHOVELE	TEAL
Nabesna Road	87				0			0	0	0	0	0	0		0	0	0
N.Slana Homestead	87				0			0	0	0	0	0	0		0	0	0
Paxson	87				2			4	0	0	21	40	29		77	12	63
Slana	87				0			0	0	0	0	0	0		0	0	0
Sourdough	87				0			0	0	0	0	0	11		0	0	11
S.Slana Homestead	87				0			0	0	0	0	0	0		0	0	0
S.Wrangell Mountain	87				8			0	0	0	0	0	8		0	8	0
Tazlina	87				9			4	0	0	16	5	23		13	0	9
Tonsina	87				2			0	0	0	0	17	31		18	1	7
West Glenn Highway	87				0			0	0	0	0	0	0		0	0	0
ARCTIC SLOPE																	
Barrow	88	120						2270	334	0	0						
Kakktovik	87	172			180		19					6					
Nuiqsut	85	6						1340									
Point Lay	87	498			434							9					
Wainwright	88	572			5		29	607	129	0	0	18	1				
NORTHWEST ARCTIC																	
Kivalina	86	54			120		33			0	1	9	8				
SEWARD PENINSULA-NORTON SOUND																	
Brevig Mission	89	464			146	40	143	57		3	6	89	43		0		6
Golovin	89	345			214	7	6	19		20	106	426	107		0		41
Shishmaref	89	422			416	0	62	51		0	17	646	230		0		84
UPPER YUKON-KOYUKUK-LOWER TANANA																	
Allakaket	84	1			301	0	34	191		12	15	305	178	0	221	27	67
Bettles	84	0			13	0	0	2		0	0	40	17	0	0	0	0
Fort Yukon	89	0			1071		643	1059		9	27	1060	1647		404		48
UPPER TANANA																	
Chisana	87				0			0		0	0	0	3		0	0	0
Dot Lake	87				0			0		0	0						
Northway	87				94				80	0	2	60	116		20	40	46
Tanacross	87				16			8	0	0	0	0	30				
Tetlin	87				1					0	0	28	28		28	28	0
Tok	87				29			0	0	0	23	145	486		226	69	100

APPENDIX
TABLE 6.
(CONTINUED)

	STUDY YR	BUFFALED	HAQUILEN	SCAUP	GOLDENEY	SQUAW	SCOTER	EIDER	MERGANSER	OLDSQUAW	LOON	MURRE	TERN	OCYASTCEHRE R	SEAOTBIRRD	GULL	PUFFIN	OSTHOIERRED
LOWER KENAI PENINSULA																		
English Bay	87	0	28	12	17		198	0	28	0	0	0	0	0	0	34	104	2
Port Graham	87	4	7	0	110		176	41	24	0	6	0	0	0	0	12	12	29
PRINCE WILLIAM SOUND																		
Tatitlek	88	3	0	0	18	0	276		24	0								
ALASKA PENINSULA																		
Chignik Bay	84									97					0			0
Chignik Lagoon	84									258					0			0
Chignik Lake	84									403					20			0
Egegik	84									573					34			0
False Pass	88	0	0	33	0	0	7	0	0		0	0	0	0	0	0	0	
Ivanof Bay	84									125					0			0
Nelson Lagoon	87	0	0	0	116	0		0	0		0	0	0	0	0	0	0	
Perryville	84									150					0			0
Pilot Point	87						0	4		2					44			
Port Heiden	87						48	20		4								
Ugashik	87						0	0			0	0	0	0	0	0	0	
BRISTOL BAY																		
Dillingham	84									2630								
Ekwok	87							0		49								
Koliganek	87							17		91								
Levelock	89							0		51								
New Stuyahok	87							185		4								
YUKON KUSKOKWIM DELTA																		
South Coast	87	0	0	672	67	50	1966	437	67		370	336	0		0	84		
Mid Coast	87	31	120	383	195	1428	371	2293	4		534	10	39		275	123		
North Coast	87	0	0	34	17	0	150	28	11		14	0	0		0	0		
Lower Kuskokwim Rive	87	186	99	4064	1838	952	5717	854	444		369	8	0		42	37		
Lowr Yukon River	87	32	7	131	80	37	137	16	98		82	0	3		33	92		
Bethel	87	32	16	972	136	223	745	351	0		39	0	0		0	0		
COPPER RIVER BASIN																		
Chistochina	87	0		0	0					0								
Chitina	87	0		5	0					0								
Copper Center	87	0		15	0					0								
East Glenn Highway	87	0		0	0					0								
Gakona	87	22		20	0					0								
Glennallen	87	7		1	0					0								
Gulkana	87	0		0	0					0								
Kenny Lake	87	0		11	0					0								
Lake Louise	87	0		0	0					10								
McCarthy	87	2		4	1					0								
Mentasta	87	0		0	0					31								
Mentasta Pass	87	0		6	13					15								

APPENDIX
TABLE 6.
(CONTINUED)

	STUDY YR	BUFFALO	HAQUILEN	SCAUP	GOLDEYE	SQUAW	SCOTER	EIDER	MERGANSER	OLDSQUAW	LOON	MURRE	TERN	OCYASTCHER	SEATBIRD	GULL	PUFFIN	OSTHBIRD
Nabesna Road	87	0		0	0					0								
N.Slana Homestead	87	0		0	0					13								
Paxson	87	12		73	6					83								
Slana	87	0		0	0					0								
Sourdough	87	0		0	0					0								
S.Slana Homestead	87	0		0	0					0								
S.Wrangell Mountain	87	0		0	0					0								
Tazlina	87	2		6	0													
Tonsina	87	13		5	2					5								
West Glenn Highway	87	0		0	0					0								
ARCTIC SLOPE																		
Barrow	88							5208		77								
Kakktovik	87					64		105										
Nuiqsut	85																	
Point Lay	87					220		702										
Wainwright	88							337		12								
NORTHWEST ARCTIC																		
Kivalina	86					4		168		21		18						
SEWARD PENINSULA-NORTON SOUND																		
Brevig Mission	89			0		0	6	83			0							
Golovin	89			0			1	0		12	1							
Shishmaref	89			112		0	67	28		0	0							
UPPER YUKON-KOYUKUK-LOWER TANANA																		
Allakaket	84	1	2	143	0	342	181	0	7	47								
Bettles	84	0	0	0	0	16	2	0	0	0								
Fort Yukon	89	0		0	8		2208			211								
UPPER TANANA																		
Chisana	87	0		0	0					0								
Dot Lake	87									51								
Northway	87	40		0	0					2330								
Tanacross	87									176								
Tetlin	87	0		0	0					698								
Tok	87	32		6	39					0								

APPENDIX TABLE 7. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SEASON AND YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	SPRING GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	SUMMER GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL
Lower Kenai Peninsula													
English Bay	87	0	25	0	0	131	156						
Port Graham	87	0	286	0	0	26	312						
Alaska Peninsula													
False Pass	88	0	140	0	0	0	140						
Nelson Lagoon	87	0	0				0						
Pilot Point	87	21	100	22	7	*	150						
Port Heiden	87	60	97	3	0	*	160						
Ugashik	87	5	24	5	0	*	34						
		*Harvest of "Other" birds not available by season.											
Bristol Bay													
Ekwok	87	21	147	0	0		168						
Koliganek	87	243	933	1	17		1194						
Levelock	89	105	136	1	1		243						
New Stuyahok	87	0	720	6	2		728						
Arctic Slope													
Barrow	88	2837	1832	0	0	0	4669	301	645	0	0	0	946
Wainwright	88	833	96	0	0	0	929	245	495	0	0	0	740
Seward Peninsula-Norton Sound													
Brevig Mission	89	836	158	6	3	0	1003	0	0	0	0	0	0
Golovin	89	445	331	45	12	0	833	0	0	0	0	1	1
Shishmaref	89	361	741	17	0	0	1119	34	140				174
Stebbins	80	1105	1483	210	36	0	2834	0	0	0	0	0	0
Upper Yukon-Koyukuk-Lower Tanana													
Allakaket	84	427	1100	7	12	0	1547	12	41	0	0	0	53
Beaver	85	409	482	6			897						
Bettles	84	11	64	0	0	0	74	0	0	0	0	0	0
Fort Yukon	87	2412	3590	*	*	0	6002	0	0	0	0	0	0
Tanana	88	504	538	11	0	0	1053	0	24	0	0	0	24

Note: * Harvests of crane and swan at Fort Yukon not collected by season.
Some species and season level data missing for Fort Yukon, for ducks and geese, so totals are greater than the sum of seasons.

APPENDIX TABLE 7. (CONTINUED) MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SEASON AND YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	FALL GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	TOTAL GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL
Lower Kenai Peninsula													
English Bay	87	0	366	0	0	10	376	0	391	0	0	141	532
Port Graham	87	0	244	0	0	4	248	0	530	0	0	30	560
Alaska Peninsula													
False Pass	88	163	374	0	0	0	537	163	514	0	0	0	677
Nelson Lagoon	87	61	454	0	0	0	515	61	454	0	0	0	515
Pilot Point	87	111	239	19	6	*	375	132	339	41	14	44	570
Port Heiden	87	131	300	3	0	*	434	191	397	6	0	15	609
Ugashik	87	16	88	4	1	*	109	21	112	9	1	5	148
Bristol Bay													
Ekwok	87	10	60	0	1		71	31	206	0	1	0	238
Koliganek	87	2	43	0	2		47	245	976	1	19	0	1241
Levelock	89	28	238	9	2		277	133	374	10	3	0	520
New Stuyahok	87	0	0	0	0		0	0	720	6	2	0	728
Arctic Slope													
Barrow	88	56	1843	0	0	0	1899	3194	4320	0	0	0	7514
Wainwright	88	264	0	0	0	0	264	1342	591	0	0	0	1933
Seward Peninsula-Norton Sound													
Brevig Mission	89	14	69	0	0	0	83	850	227	6	3	0	1086
Golovin	89	146	256	61	8	0	471	591	587	106	20	1	1305
Shishmaref	89	556	286	0	0	0	842	951	1167	17	0	0	2135
Stebbins	80	720	1440	210	42	0	2412	1825	2923	420	78	0	5246
Upper Yukon-Koyukuk-Lower Tanana													
Allakaket	84	88	380	7	0		475	527	1521	15	12	0	2075
Beaver	85	107	230	1			438	516	712	7			1335
Bettles	84	5	12	0	0	0	17	16	76	0	0	0	91
Fort Yukon	87	361	1994	*	*	0	2355	2945	7111	27	9	0	10092
Tanana	88	123	231	0	0	0	354	627	793	11	0	0	1431

APPENDIX TABLE 8. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SEASON AND YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	SPRING GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	SUMMER GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL
Lower Kenai Peninsula													
English Bay	87	0	23	0	0	184	207						
Port Graham	87	0	295	0	0	36	331						
Alaska Peninsula													
False Pass	88	0	81	0	0		81						
Nelson Lagoon	87	0	0				0						
Pilot Point	87	50	75	133	44	*	302						
Port Heiden	87	149	96	18	0	*	263						
Ugashik	87	12	18	30	0	*	60						
		*Harvest of "Other" birds not available by season.											
Bristol Bay													
Ekwok	87	41	138	0	0		179						
Koliganek	87	436	846	7	137		1426						
Levelock	89	217	123	7	10		357						
New Stuyahok	87	319	488	33	15		855						
Arctic Slope													
Barrow	88	12609	2742	0	0	0	15351	1276	967	0	0	0	2243
Wainwright	88	3416	144	0	0	0	3560	968	732	0	0	0	1700
Seward Peninsula-Norton Sound													
Brevig Mission	89	2441	401	36	32	0	2909	0	0	0	0	0	0
Golovin	89	1139	501	270	126	0	2036	0	0	0	0	3	3
Shishmaref	89	1320	1220	102	0	0	2642	71	182	0	0	0	253
Stebbins	80	5525	2220	2100	360	0	10205	0	0	0	0	0	0
Upper Yukon-Koyukuk-Lower Tanana													
Allakaket	84	2134	1650.5	40	60	0	3885	60	62	0	0	0	122
Beaver	85	2044	723	51			2818	0	0	0	0	0	0
Bettles	84	52	95	0	0	0	147	0	0	0	0	0	0
Fort Yukon	87	9167	3590	*	*	0	12757	0	0	0	0	0	0
Tanana	88	2016	807	47	0	0	2870	0	36	0	0	0	36

Note:* Harvests of crane and swan at Fort Yukon not collected by season.
Some species and season level data missing for Fort Yukon, for ducks and geese, so totals are greater than the sum of seasons.

APPENDIX TABLE 8. (CONTINUED) MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SEASON AND YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	FALL GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	TOTAL GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL
Lower Kenai Peninsula													
English Bay	87	0	371	0	0	10	381	0	394	0	0	194	588
Port Graham	87	0	228	0	0	11	239	0	523	0	0	47	570
Alaska Peninsula													
False Pass	88	233	221	0	0	0	454	233	302	0	0	0	535
Nelson Lagoon	87	152	346				498	152	346	0	0	0	498
Pilot Point	87	232	157	114	38		541	282	232	247	82	5	848
Port Heiden	87	266	218	18	0		502	415	314	36	0	1	766
Ugashik	87	32	51	24	6		113	44	69	54	6	1	174
Bristol Bay													
Ekwok	87	15	57	0	9		81	56	195	0	9	0	260
Koliganek	87	5	43	0	18		66	441	889	7	155	0	1492
Levelock	89	49	218	51	19		337	266	341	58	29	0	694
New Stuyahok	87	0	0	0	0		0	319	488	33	15	0	855
Arctic Slope													
Barrow	88	169	2765	0	0	0	2934	14054	6474	0	0	0	20528
Wainwright	88	798	11	0	0	0	809	5182	887	0	0	0	6069
Seward Peninsula-Norton Sound													
Brevig Mission	89	52	146	0	0	0	198	2498	546	34	30	0	3109
Golovin	89	510	370	366	84	0	1330	1648	873	636	209	4	3370
Shishmaref	89	1491	408	0	0	0	1899	2879	1817	106	0	0	4803
Stebbins	80	3600	2160	2100	420	0	8280	9125	4380	4200	780	0	18485
Upper Yukon-Koyukuk-Lower Tanana													
Allakaket	84	441	570	40	0	0	1051	2636	2282	80	60	0	5058
Beaver	85	532	345	9	0	0	886	2576	1068	60	0	0	3704
Bettles	84	23	17	0	0	0	40	75	113	0	0	0	188
Fort Yukon	87	1376	1994	*	*	*	0 3370	11192	7111	223	174	0	18700
Tanana	88	493	347	0	0	0	840	2509	1190	47	0	0	3746

APPENDIX TABLE 9. MIGRATORY BIRD HARVESTS(NUMBER OF BIRDS) BY SEASON AND STRATA, YUKON-KUSKOKWIM DELTA 1987. (Copp 1988).

	GEESE	DUCKS	CRANE	SWAN	OTHER	TOTAL	GEESE	DUCKS	CRANE	SWAN	OTHER	TOTAL	GEESE	DUCKS	CRANE	SWAN	OTHER	TOTAL
	SPRING						EARLY SUMMER						MID SUMMER					
South Coast	1545	1614	336	521	118	4134	135	1176	118	84	252	1765	0	387	0	0	353	740
Mid Coast	1050	2862	150	206	125	4393	450	969	73	81	88	1661	64	515	8	68	46	701
North Coast	2781	1108	257	402	14	4562	276	585	21	19	0	901	53	762	17	0	0	832
Kuskokwim River	3481	16959	377	1628	370	22815	106	3719	56	191	27	4099	6	2326	23	18	12	2385
Yukon River	1337	1803	72	1023	104	4339	109	697	29	47	60	942	71	446	15	31	0	563
Bethel	275	842	21	57	5	1200	259	721	19	58	10	1067	0	986	0	0	8	994
TOTAL	10469	25188	1213	3837	736	41443	1335	7867	316	480	437	10435	194	5422	63	117	419	6215
	LATE SUMMER						EARLY FALL						TOTAL NUMBER OF BIRDS					
South Coast	34	1445	34	50	67	1630	185	2184	17	319	0	2705	1899	6806	505	974	790	10974
Mid Coast	1148	4644	376	554	545	7267	3596	3354	34	809	176	7969	6308	12344	641	1718	980	21991
North Coast	172	1077	6	26	0	1281	750	867	50	250	0	1917	4032	4399	351	697	14	9493
Kuskokwim River	90	3124	0	41	15	3270	271	4473	0	98	33	4875	3954	30601	456	1976	457	37444
Yukon River	226	1120	16	52	19	1433	202	468	57	34	27	788	1945	4534	189	1187	210	8065
Bethel	0	608	0	0	0	608	348	2328	8	55	16	2755	882	5485	48	170	39	6624
TOTAL	1670	12018	432	723	646	15489	5352	13674	166	1565	252	21009	19020	64169	2190	6722	2490	94591

APPENDIX TABLE10. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SEASON AND STRATA , YUKON-KUSKOKWIM DELTA,1987. (Copp 1988).

	GEESE	DUCKS	CRANE	SWAN	OTHER	TOTAL	GEESE	DUCKS	CRANE	SWAN	OTHER	TOTAL
	SPRING						EARLY SUMMER					
South Coast	8090.94	4149.43	4032	7788.95	885.00	24946.32	713.97	2673.49	1416	1255.80	1722.50	7781.76
Mid Coast	5394.41	8310.26	1800	3079.70	1073.66	19658.03	1859.42	2875.11	876	1210.95	625.00	7446.48
North Coast	15609.82	2327.39	3084	6009.90	105.00	27136.11	1766.40	1256.15	252	284.05	0.00	3558.60
Kuskokwim River	17240.72	37481.97	4524	24338.60	2963.38	83308.20	535.12	8662.30	672	2855.45	114.30	12839.17
Yukon River	6959.76	3836.49	864	15293.85	411.29	27365.35	528.34	1367.02	348	702.65	317.31	3263.32
Bethel	1309.19	2222.27	252	852.15	37.50	3675.24	1066.56	1594.64	228	867.10	75.00	3831.30
TOTAL	54604.84	58327.81	14556	57363.15	5475.83	186089.25	6469.81	18428.71	3792	7176.00	2854.11	38720.63
	MID SUMMER						LATE SUMMER					
South Coast	0.00	847.80	0	0.00	824.20	1672.00	105.40	2747.80	408	747.50	502.50	4511.20
Mid Coast	235.99	1185.34	96	1016.60	308.94	2842.87	5269.03	9903.77	4512	8282.30	2674.70	30641.80
North Coast	184.10	1574.42	204	0.00	0.00	1962.52	929.68	1938.04	72	388.70	0.00	3328.42
Kuskokwim River	18.60	4729.09	276	269.00	60.00	5352.69	481.32	5694.71	0	612.95	70.10	6859.08
Yukon River	331.46	773.10	180	463.95	0.00	1748.51	1136.31	2198.56	192	777.40	142.50	4446.77
Bethel	0.00	2124.93	0	0.00	60.00	2184.93	0.00	1162.43	0	0.00	0.00	1162.43
TOTAL	770.15	11234.68	756	1749.55	1253.14	15763.52	7921.74	23645.31	5184	10808.85	3389.80	50949.70
	EARLY FALL						TOTAL					
South Coast	648.30	4721.34	204	4769.05	0.00	10342.69	9558.61	15139.86	6060	14561.30	3934.20	49253.97
Mid Coast	23457.28	7008.12	408	12094.55	351.72	43319.67	36216.13	29282.60	7692	25684.10	5034.02	103908.85
North Coast	4292.66	1770.66	600	3732.50	0.00	10395.82	22782.66	8866.66	4212	10415.15	105.00	46381.47
Kuskokwim River	1303.63	9407.44	0	1465.10	181.50	12357.67	19579.39	65975.51	5472	29541.10	3389.28	123957.28
Yukon River	1150.70	814.74	684	508.30	218.94	3376.68	10106.57	8989.91	2268	17746.15	1090.04	40200.67
Bethel	1947.08	4783.10	96	822.25	120.00	7768.43	4322.83	11887.37	576	2541.50	292.50	19620.20
TOTAL	32799.65	28505.40	1992	23391.75	872.16	87560.96	102566.19	140141.91	26280	100489.30	13845.04	383322.44

APPENDIX TABLE 11. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND COMMUNITY, LOWER KENAI PENINSULA, 1987

SPECIES	ENGLISH BAY SPRING	FALL	TOTAL	PORT GRAHAM SPRING	FALL	TOTAL
GEESE	0	0	0	0	0	0
DUCKS						
PINTAIL	0	0	0	2	19	21
MALLARD	2	107	109	71	57	128
GADWALL	0	0	0	0	0	0
WIGEON	0	0	0	0	6	6
TEAL	0	0	0	0	13	13
GOLDENEYE	2	15	17	47	63	110
BUFFLEHHEAD	0	0	0	0	4	4
HARLEQUIN	0	28	28	0	7	7
EIDER	0	0	0	29	12	41
SCAUP	0	12	12	0	0	0
SCOTER	21	177	198	118	58	176
MERGANSER	0	28	28	19	6	24
TOTAL DUCKS	25	367	392	286	245	530
SEABIRDS						
LOON	0	0	0	2	4	6
PUFFIN	104	0	104	12	0	12
GULL	24	10	34	12	0	12
UNKNOWN SEABIRD	2	0	2	0	0	0
TOTAL SEABIRDS	130	10	140	26	4	30
EGGS						
GULL EGGS			160			124
PUFFIN EGGS			22			12
DUCK EGGS			0			0

APPENDIX
TABLE 12

MIGRATORY BIRD HARVESTS(NUMBER OF BIRDS), BY SPECIES, SEASON, AND COMMUNITY, SOUTH ALASKA PENINSULA, 1987 AND 1988

	FALSE PASS			NELSON LAGOON		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE						
WHITEFRONT	0	0	0	0	0	0
CANADA	0	62	62	0	0	0
EMPEROR	0	29	29	0	61	61
BRANT	0	73	73	0	0	0
SNOW	0	0	0	0	0	0
UNKNOWN GEESE	0	0	0	0	0	0
TOTAL GEESE	0	164	164	0	61	61
SWAN	0	0	0	0	0	0
CRANE	0	0	0	0	0	0
DUCKS						
PINTAIL	17	45	62	0	100	100
MALLARD	26	99	125	0	127	127
GADWALL	6	17	23	0	0	0
WIDGEON	0	2	2	0	1	1
TEAL	67	196	263	0	109	109
EIDER	0	0	0	0	0	0
SCAUP	24	9	33	0	0	0
SCOTER	0	7	7	0	0	0
UNKNOWN DUCKS	0	0	0	0	0	0
GOLDENEYE	0	0	0	0	116	116
TOTAL DUCKS	140	375	515	0	454	454
SHOREBIRDS			0			0
EGGS						
GULL EGGS			801			210
GEESE EGGS			0			0
DUCK EGGS			0			4
SWAN EGGS			0			0
TERN EGGS			0			71
TOTAL EGGS			801			285

APPENDIX TABLE 13. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS)BY SPECIES, SEASON AND COMMUNITY, NORTH ALASKA PENINSULA 1987

	PILOT POINT			PORT HEIDEN			UGASHIK		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE									
WHITEFRONT	12	11	23	4	5	9	5	0	5
CANADA	1	26	27	0	21	21	0	6	6
EMPEROR	8	56	64	56	78	134	0	10	10
BRANT	0	1	1	0	25	25	0	0	0
SNOW	0	6	6	0	0	0	0	0	0
UNKNOWN GEESE	0	11	11	0	2	2	0	0	0
TOTAL GEESE	21	111	132	60	131	191	5	16	21
SWAN	7	6	14	0	0	0	0	1	1
CRANE	22	19	41	3	3	6	5	4	9
DUCKS									
PINTAIL	34	49	83	4	86	90	16	4	20
MALLARD	33	66	99	12	108	120	3	20	23
GADWALL	0	26	26	0	0	0	0	0	0
WIDGEON	0	1	1	5	20	25	2	9	11
TEAL	29	95	124	8	82	90	3	45	48
EIDER	4	0	4	20	0	20	0	0	0
SCAUP				0	0	0	0	0	0
SCOTER	0	0	0	48	0	48	0	0	0
UNKNOWN DUCKS					4	4			
TOTAL DUCKS	100	237	337	97	300	397	24	78	102
SHOREBIRDS			44			15			5
EGGS									
GULL EGGS			924			1883			150
GEESE EGGS			0			0			0
DUCK EGGS			64			46			100
SWAN EGGS			2			0			0
TERN EGGS						342			
TOTAL EGGS			990			2444			234

APPENDIX TABLE 14. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND COMMUNITY, NUSHAGAK RIVER 1987 AND 1989

	EKWOK			KOLIGANEK			LEVELOCK			NEW STUYAHOK		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE												
WHITEFRONT	7	0	7	33	2	35	66	0	66	0	0	0
TAVERNERS	2	2	4	78	0	78			0	52	0	52
CACKLERS	1	6	7	88	0	88	12	6	18	102	0	102
LESSERS							13	13	26			0
EMPEROR				19	0	19	0	2	2	0	0	0
BRANT				8	0	8	13	6	19	0		0
SNOW									0			0
UNKNOWN GEESE	11	2	13	17	0	17			0	52	0	52
TOTAL GEESE	21	10	31	243	2	245	104	27	131	206	0	206
SWAN	0	1	1	17	2	19	1	2	3	2	0	2
CRANE	0	0	0	1	0	1	1	9	10	6	0	6
DUCKS												
PINTAIL	39	13	52	417	0	417	60	97	157	233	0	233
MALLARD	71	35	106	424	43	467	61	105	166	298	0	298
EIDER	0	0	0			17	0	0	0			185
UNKNOWN DUCKS	38	11	49	91	0	91	15	37	52	4	0	4
TOTAL DUCKS	148	59	207	932	43	992	136	239	375	535	0	720
SHOREBIRDS	0	0	0									
EGGS												
GULL EGGS			0			168			792			288
GEESE EGGS			0			12			144			0
DUCK EGGS			0			36			396			0
SWAN EGGS			0			0			12			0
TOTAL EGGS			0			216			1344			288

APPENDIX TABLE 15. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

Source: Copp, 1988

SPECIES	SPRING SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	EARLY SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT	638	279	475	1019	198	31	2640	34	44	14	32	11	86	221
LESSER CANADA	638	71	383	1385	711	109	3297	67	4	50	53	27	10	211
CACKLING	235	107	590	739	238	93	2002	17	55		21	37	163	293
LESSER SNOW			1275	14	182		1471			207		13		220
EMPEROR	34	392	39	161	8	42	676	17	112			17		146
BLACK BRANT		201	19	163			383		235	5		4		244
TOTAL GEESE	1545	1050	2781	3481	1337	275	10469	135	450	276	106	109	259	1335
TUNDRA SWAN	521	206	402	1628	1023	57	3837	84	81	19	191	47	58	480
SANDHILL CRANE	336	150	257	377	72	21	1213	118	73	21	56	29	19	316
DUCKS														
PINTAIL	790	179	701	4416	1090	177	7353	302	86	475	391	254	231	1739
MALLARD	134	212	129	2315	327	5	3122	84	148	67	267	121	10	697
GADWALL	34	30	158	276	111	10	619		9	10	23	46		88
WIGEON		23	14	1058	26		1121	17	13		227	43	38	338
SHOVELER		84	52	269	68	26	499		16		59	47	67	189
GR WING TEAL	17	4	9	685	74	31	820		30		49	77		156
BUFFLEHEAD		13		96			109				21	9		30
HRLEQUIN		4		41			45		13			7		20
GREATER SCAUP	34	41	6	1827	8	16	1932	118	26		384	9	115	652
GOLDENEYE		22		1126	15	16	1179	67	13		203			283
OLDSQUAW	34	661		522		104	1321	17	76		232	10		335
W WING SCOTER	67	40		576		47	730				639	4	58	701
BLACK SCOTER	67	18		2157	26	93	2361	571	22		1098	62	202	1955
SURF SCOTER		9	9	548	4	5	575		12	33	120	4		169
COMMON EIDER		105		12	3		120		64					64
KING EIDER	437	1267		842		312	2858		393					393
SPECTAC EIDER		146	19				165		48					48
COMMON MERG				67	48		115							0
RD BR MERG		4	11	126	3		144				6	4		10
TOTAL DUCKS	1614	2862	1108	16959	1803	842	25188	1176	969	585	3719	697	721	7867

APPENDIX TABLE 15. (CONTINUED)

MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

Source: Copp, 1988

	SPRING							EARLY SUMMER						
SPECIES	SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON		51		79			130					2		2
RD THROT LOON		4		14	3		21				6	4		10
COMMON LOON	118	34	14	209	7	5	387	185	83		12	21	10	311
ARCTIC LOON				9			9							0
COMMON MURRE		10					10							0
SM SHOIREBIRD		22		33	25		80				9	6		15
LG SHOREBIRD		4					4					2		2
MEW GULL				9			9		5					5
SABINES GULL							0							0
GLAUCOUS GULL				17	69		86	67				22		89
ARCTIC TERN							0					3		3
TOTAL OTHER	118	125	14	370	104	5	736	252	88	0	27	60	10	437
TOTAL GEESE	1545	1050	2781	3481	1337	275	10469	135	450	276	106	109	259	1335
TUNDRA SWAN	521	206	402	1628	1023	57	3837	84	81	19	191	47	58	480
SANDHILL CRANE	336	150	257	377	72	21	1213	118	73	21	56	29	19	316
TOTAL DUCKS	1614	2862	1108	16959	1803	842	25188	1176	969	585	3719	697	721	7867
TOTAL OTHER	118	125	14	370	104	5	736	252	88	0	27	60	10	437

APPENDIX TABLE 15. (CONTINUED) MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	MID SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	LATE SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT							0		85	32	72	83		272
LESSER CANADA			9		45		54		270	57		19		346
CACKLING		8	44	6	22		80	34	191	28	18	72		343
LESSER SNOW							0			19				19
EMPEROR		13			4		17		290	36		52		378
BLACK BRANT		43					43		312					312
TOTAL GEESE	0	64	53	6	71	0	194	34	1148	172	90	226	0	1670
TUNDRA SWAN		68		18	31		117	50	554	26	41	52		723
SANDHILL CRANE		8	17	23	15		63	34	376	6		16		432
DUCKS														
PINTAIL	168	96	626	189	88	40	1207	403	1214	309	685	200	132	2943
MALLARD	17	159		40	53		269	34	1315	88	680	318	156	2591
GADWALL		49	117	8	45		219	34	150	249	147	120		700
WIGEON		4	19	292	55		370		43		236	101		380
SHOVELER		31		298	13		342	101	494	70	188	88		941
GR WING TEAL		14			94		108	269	200	250	669	185	148	1721
BUFFLEHEAD		4		23	20	32	79		14		27	3		44
HRLEQUIN		4					4		99				16	115
GREATER SCAUP	202	16		1295	41	809	2363	218	114	28	209	67		636
GOLDENEYE		7			13	65	85		131		108	9		248
OLDSQUAW		66		181	24	40	311		563		18	4	39	624
W WING SCOTER		13					13			46	27			73
BLACK SCOTER		17					17	386		28	4		117	535
SURF SCOTER		14					14		134	9				143
COMMON EIDER		21					21		53			13		66
KING EIDER							0		86					86
SPECTAC EIDER							0		34					34
COMMON MERG							0				18	8		26
RD BR MERG							0				108	4		112
TOTAL DUCKS	387	515	762	2326	446	986	5422	1445	4644	1077	3124	1120	608	12018

APPENDIX TABLE 15. (CONTINUED)

MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	MID SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	LATE SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON		4					4		4					4
RD THROT LOON							0		4					4
COMMON LOON		33				8	41	67	290		7	19		383
ARCTIC LOON							0							0
COMMON MURRE	336						336				8			8
SM SHOIREBIRD		9					9		122					122
LG SHOREBIRD							0		7					7
MEW GULL							0							0
SABINES GULL							0							0
GLAUCOUS GULL	17			12			29		79					79
ARCTIC TERN							0		39					39
TOTAL OTHER	353	46	0	12	0	8	419	67	545	0	15	19	0	646
TOTAL GEESE	0	64	53	6	71	0	194	34	1148	172	90	226	0	1670
TUNDRA SWAN		68		18	31		117	50	554	26	41	52		723
SANDHILL CRANE		8	17	23	15		63	34	376	6		16		432
TOTAL DUCKS	387	515	762	2326	446	986	5422	1445	4644	1077	3124	1120	608	12018
TOTAL OTHER	353	46	0	12	0	8	419	67	545	0	15	19	0	646

APPENDIX TABLE 15. (CONTINUED) MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	FALL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	TOTAL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT		322	50	70	130	16	588	672	730	571	1193	422	133	3721
LESSER CANADA	34	144	133	109	64	103	587	739	489	632	1547	866	222	4495
CACKLING	151	64	150	70	3	63	501	437	425	812	854	372	319	3219
LESSER SNOW		2928	417		5	142	3492	0	2928	1918	14	200	142	5202
EMPEROR		102		9		24	135	51	909	75	170	81	66	1352
BLACK BRANT		36		13			49	0	827	24	176	4	0	1031
TOTAL GEESE	185	3596	750	271	202	348	5352	1899	6308	4032	3954	1945	882	19020
TUNDRA SWAN	319	809	250	98	34	55	1565	974	1718	697	1976	1187	170	6722
SANDHILL CRANE	17	34	50		57	8	166	505	641	351	456	189	48	2190
DUCKS														
PINTAIL	823	1424	300	906	79	765	4297	2486	2999	2411	6587	1711	1345	17539
MALLARD	67	625	50	1110	32	511	2395	336	2459	334	4412	851	682	9074
GADWALL	50	258	417	99	48	126	998	118	496	951	553	370	136	2624
WIGEON		151		166	98	173	588	17	234	33	1979	323	211	2797
SHOVELER		200	50	113	29	32	424	101	825	172	927	245	125	2395
GR WING TEAL	202	256		584	86	332	1460	488	504	259	1987	516	511	4265
BUFFLEHEAD				19			19	0	31	0	186	32	32	281
HRLEQUIN				58			58	0	120		99	7	16	242
GREATER SCAUP	101	186		349	7	32	675	673	383	34	4064	132	972	6258
GOLDENEYE		22	17	401	42	55	537	67	195	17	1838	79	136	2332
OLDSQUAW		62				39	101	51	1428		953	38	222	2692
W WING SCOTER	84	53		392		97	626	151	106		1634	4	202	2143
BLACK SCOTER	756	31	33	157	30	110	1117	1780	88	61	3416	118	522	5985
SURF SCOTER	34	9			7	16	66	34	178	51	668	15	21	967
COMMON EIDER		37				16	53	0	280		12	16	16	324
KING EIDER						24	24	437	1746		842	0	336	3361
SPECTAC EIDER		40					40	0	268	19	0	0	0	287
COMMON MERG	67			96			163	67	0		181	56	0	304
RD BR MERG				23	10		33	0	4	11	263	21	0	299
TOTAL DUCKS	2184	3354	867	4473	468	2328	13674	6806	12344	4399	30601	4534	5485	64169

APPENDIX TABLE 15. (CONTINUED)

MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	FALL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	TOTAL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON					4		4	0	59	0	79	6	0	144
RD THROT LOON		4			4		8	0	12	0	20	11	0	43
COMMON LOON		22			19	16	57	370	462	14	228	66	39	1179
ARCTIC LOON				33			33	0	0	0	42	0	0	42
COMMON MURRE							0	336	10	0		0	0	354
SM SHOIREBIRD							0	0	153	0	42	31	0	226
LG SHOREBIRD		111					111	0	122	0		2	0	124
MEW GULL							0	0	5	0	9	0	0	14
SABINES GULL		35					35	0	35	0		0	0	35
GLAUCOUS GULL		4					4	84	83	0	29	91	0	287
ARCTIC TERN							0	0	39	0	0	3	0	42
TOTAL OTHER	0	176	0	33	27	16	252	790	980	14	457	210	39	2490
TOTAL GEESE	185	3596	750	271	202	348	5352	1899	6308	4032	3954	1945	882	19020
TUNDRA SWAN	319	809	250	98	34	55	1565	974	1718	697	1976	1187	170	6722
SANDHILL CRANE	17	34	50		57	8	166	505	641	351	456	189	48	2190
TOTAL DUCKS	2184	3354	867	4473	468	2328	13674	6806	12344	4399	30601	4534	5485	64169
TOTAL OTHER	0	176	0	33	27	16	252	790	980	14	457	210	39	2490

APPENDIX TABLE 16. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES, SEASON AND COMMUNITY, SEWARD PENINSULA-NORTON SOUND, 1989

	BREVIG MISSION				GOLOVIN				SHISHMAREF			
SPECIES	SUMMER	FALL	SPRING	TOTAL	SUMMER	FALL	SPRING	TOTAL	SUMMER	FALL	SPRING	TOTAL
GEESE												
WHITEFRONT	0	0	57	57	0	16	3	19	0	0	51	51
CANADA GEESE	0	14	132	146	0	107	107	214	0	202	214	416
EMPEROR	0	0	40	40	0	0	7	7	0	0	0	0
BRANT	0	0	464	464	0	23	322	345	34	354	34	422
SNOW	0	0	143	143	0	0	6	6	0	0	62	62
TOTAL GEESE	0	14	836	850	0	146	445	591	34	556	361	951
SWAN	0	0	3	3	0	8	12	20	0	0	0	0
CRANE	0	0	6	6	0	61	45	106	0	0	17	17
DUCKS												
PINTAIL	0	26	63	89	0	191	235	426	112	135	399	646
MALLARD	0	29	14	43	0	34	73	107	0	0	230	230
WIDGEON	0	0	0	0	0	0	0	0	0	0	0	0
TEAL	0	0	6	6	0	24	17	41	28	28	28	84
SCAUP	0	0	0	0	0	0	0	0	0	56	56	112
OLDSQUAW	0	0	0	0	0	0	0	0	0	0	0	0
SCOTER	0	0	6	6	0	1	0	1	0	67	0	67
EIDER	0	14	69	83	0	0	0	0	0	0	28	28
OTHER DUCK	0	0	0	0	0	6	6	12	0	0	0	0
TOTAL DUCKS	0	69	158	227	0	256	331	587	140	286	741	1167
LOON	0	0	0	0	1	0	0	1	0	0	0	0
EGGS												
GULL EGGS				252				458				1618
GEESE EGGS				14				25				0
DUCK EGGS				295				62				697
SWAN EGGS				23				4				0
MURRE EGGS				0				184				0
TERN EGGS				57				0				0
PLOVER EGGS				80				0				67
SNIPE EGGS				120				0				0
TOTAL EGGS				841				733				2382

APPENDIX TABLE 17. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY SPECIES AND COMMUNITY, UPPER YUKON-KOYUKUK-LOWER TANANA 1984

BIRD SPECIES	ALLAKAKET SPRING	SUMMER	FALL	TOTAL	BETTLES SPRING	SUMMER	FALL	TOTAL
GEESE								
CANADA GOOSE	224	6	71	301	8	0	5	13
SNOW GOOSE	34	0	0	34	0	0	0	0
BLACK BRANT	0	0	1	1	0	0	0	0
WHITE-FRONTED GOOSE	169	6	16	191	2	0	0	2
TOTAL GEESE	427	12	88	527	11	0	5	16
CRANE	7	0	7	15	0	0	0	0
SWAN	12	0	0	12	0	0	0	0
DUCKS								
MALLARD	96	12	70	178	16	0	0	16
PINTAIL	202	18	85	305	40	0	0	40
GREEN-WINGED TEAL	19	0	10	29	0	0	0	0
BLUE WINGED TEAL	13	0	24	37	0	0	0	0
AMERICAN WIGEON	145	0	76	221	0	0	0	0
SHOVELER	21	0	6	27	0	0	0	0
REDHEAD	0	0	8	8	0	0	0	0
RING-NECKED DUCK	7	0	15	22	0	0	0	0
CANVASBACK	15	0	2	17	0	0	0	0
SCAUP	115	0	28	143	0	0	0	0
GOLDENEYE	0	0	0	0	0	0	0	0
BUFFLEHEAD	1	0	0	1	0	0	0	0
OLDSQUAW	313	0	29	342	5	0	12	16
HARLEQUIN	1	0	1	2	0	0	0	0
COMMON SCOTER	1	0	0	1	0	0	0	0
SURF SCOTER	133	10	19	162	2	0	0	2
WHITE WINGED SCOTER	17	1	0	18	0	0	0	0
RED-BREASTED MERGANS	1	0	6	7	0	0	0	0
TOTAL DUCKS	1100	41	380	1521	64	0	12	75
GEESE	427	12	88	527	11	0	5	15
DUCKS	1100	41	380	1521	64	0	12	75
CRANE	7	0	7	15	0	0	0	0
SWAN	12	0	0	12	0	0	0	0
TOTAL	1547	53	475	2075	74	0	17	90

APPENDIX TABLE 18. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS)BY SPECIES, SEASON AND COMMUNITY, LOWER KENAI PENINSULA, 1987

	ENGLISH BAY			PORT GRAHAM		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE	0	0	0	0	0	0
DUCKS						
PINTAIL	0	0	0	1.6	15.2	16.8
MALLARD	2	107	109	71	57	128
GADWALL	0	0	0	0	0	0
WIGEON	0	0	0	0	4.2	4.2
TEAL	0	0	0	0	3.9	3.9
GOLDENEYE	1.8	13.5	15.3	42.3	56.7	99
BUFFLEHHEAD	0	0	0	0	1.2	1.2
HARLEQUIN	0	42	42	0	10.5	10.5
EIDER	0	0	0	46.4	19.2	65.6
SCAUP	0	0	0	0	0	0
SCOTER	18.9	159	178.2	106.2	52.2	158.4
MERGANSER	0	42	42	28.5	9	36
TOTAL DUCKS	22.7	364	386.5	296	229.1	523.6
SEABIRDS						
LOON	0	0	0	6	12	18
PUFFIN	156	0	156	18	0	18
GULL	24	10	34	12	0	12
UNKNOWN SEABIRD	0	0	0	0	0	0
TOTAL SEABIRDS	180	10	190	36	12	48
EGGS						
GULL EGGS			24			18.6
PUFFIN EGGS			3.3			1.8
DUCK EGGS			0			0

APPENDIX TABLE 19. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS)BY SPECIES, SEASON, AND COMMUNITY, SOUTH ALASKA PENINSULA, 1987 AND 1988

	FALSE PASS			NELSON LAGOON		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE						
WHITEFRONT	0	0	0	0	0	0
CANADA	0	74.4	74.4	0	0	0
EMPEROR	0	72.5	72.5	0	152	152
BRANT	0	87.6	87.6	0	0	0
SNOW	0	0	0	0	0	0
UNKNOWN GEESE	0	0	0	0	0	0
TOTAL GEESE	0	234.5	234.5	0	152	152
SWAN	0	0	0	0	0	0
CRANE	0	0	0	0	0	0
DUCKS						
PINTAIL	13.6	36	49.6	0	80	80
MALLARD	26	99	125	0	127	127
GADWALL	4.8	13.6	18.4	0	0	0
WIDGEON	0	1.4	1.4	0	1	1
TEAL	20.1	58.8	78.9	0	33	33
EIDER	0	0	0	0	0	0
SCAUP	16.8	6.3	23.1	0	0	0
SCOTER	0	6.3	6.3	0	0	0
UNKNOWN DUCKS	0	0	0	0	0	0
TOTAL DUCKS	81.3	221.4	302.7	0	346	346
SHOREBIRDS			0			0
EGGS						
GULL EGGS			120			32
GEESE EGGS						0
DUCK EGGS			0			1
SWAN EGGS			0			0
TERN EGGS						7
TOTAL EGGS			120			39

APPENDIX TABLE 20. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON, AND COMMUNITY, NORTH ALASKA PENINSULA, 1987

	PILOT POINT			PORT HEIDEN			UGASHIK		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE									
WHITEFRONT	28.8	26.4	55.2	9.6	12	21.6	12	0	12
CANADA	1.2	31.2	32.4	0	25.2	25.2	0	7.2	7.2
EMPEROR	20	140	160	140	195	335	0	25	25
BRANT	0	1.2	1.2	0	30	30	0	0	0
SNOW	0	13.8	13.8	0	0	0	0	0	0
UNKNOWN GEESE	0	19.8	19.8	0	3.6	3.6	0	0	0
TOTAL GEESE	50	232.4	282.4	149.6	266	415.4	12	32.2	44.2
SWAN	42	36	84	0	0	0	0	6	6
CRANE	132	114	246	18	18	36	30	24	54
DUCKS									
PINTAIL	27.2	39.2	66.4	3.2	68.8	72	12.8	3.2	16
MALLARD	33	66	99	12	108	120	3	20	23
GADWALL	0	20.8	20.8	0	0	0	0	0	0
WIDGEON	0	0.7	0.7	3.5	14	17.5	1.4	6.3	7.7
TEAL	8.7	28.5	37.2	2.4	24.6	27	0.9	13.5	14.4
EIDER	6.4	0	6.4	32	0	32	0	0	0
SCAUP	0	0	0	0	0	0	0	0	0
SCOTER	0	0	0	43.2	0	43.2	0	0	0
UNKNOWN DUCKS	0	0	0	0	2.88	2.88	0	0	0
TOTAL DUCKS	75.3	155.2	230.5	96.3	218	314.58	18.1	43	61.1
SHOREBIRDS			79.2			27			9
EGGS									
GULL EGGS			92.4			188.3			15
GEESE EGGS			0			0			0
DUCK EGGS			9.6			6.9			15
SWAN EGGS			0.6			0			0
TERN EGGS			0			34.2			0
TOTAL EGGS			102.6			229.4			30

APPENDIX TABLE 21. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND COMMUNITY, NUSHAGAK RIVER 1987 AND 1989

	EKWOK			KOLIGANEK			LEVELOCK			NEW STUYAHOK		
SPECIES	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
GEESE												
WHITEFRONT	16	0	16	80	4.8	84.8	158.4	0	158.4	0	0	0
TAVERNERS	4	4.2	8.2	163	0	163	0	0	0	109.2	0	109.2
CACKLERS	1	7.2	8.2	106	0	106	14.4	7.2	21.6	122.4	0	122.4
LESSERS		0	0		0	0	27.3	27.3	54.6	0	0	0
EMPEROR	48	0	48		0	0	0	5	5	0	0	0
BRANT		0	0	10	0	10	15.6	7.2	22.8	0	0	0
SNOW		0	0		0	0	0	0	0	0	0	0
UNKNOWN GEESE	18.7	3.4	22.1	28.9	0	28.9	0	0	0	88.4	0	88.4
TOTAL GEESE	87.7	14.8	102.5	387.9	4.8	392.7	215.7	46.7	262.4	320	0	320
SWAN	0	8	8	136	16	152	8	16	24	16	0	16
CRANE	0	0	0	6	0	6	6	54	60	36	0	36
DUCKS												
PINTAIL	31.2	10.4	41.6	333.6	0	333.6	48	77.6	125.6	186.4	0	186.4
MALLARD	71	35	106	424	43	467	61	105	166	298	0	298
EIDER	0	0	0	0		27.2	0		0	0		296
UNKNOWN DUCKS	36.86	11	47.53	88.27	0	88.27	14.55		50.44	3.88		3.88
TOTAL DUCKS	139.06	56.4	195.1	845.87	43	916.07	123.55	183	342.04	488.28	0	784.28
SHOREBIRDS												
EGGS												
GULL EGGS			0			28.56			134.64			48.96
GEESE EGGS			0			2.64			31.68			0
DUCK EGGS			0			3.96			43.56			0
SWAN EGGS			0			0			2.64			0
TOTAL EGGS			0			35.16			212.52			48.96

APPENDIX TABLE 22. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

(Source: Copp, 1988)

SPECIES	SPRING SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	EARLY SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT	3770.6	1648.9	2807.3	6022.3	1170.2	183.2	15602.4	200.9	260.0	82.7	189.1	65.0	508.3	1306.1
LESSER CANADA	3381.4	376.3	2029.9	7340.5	3768.3	577.7	17474.1	355.1	21.2	265.0	280.9	143.1	53.0	1118.3
CACKLING	728.5	331.7	1829.0	2290.9	737.8	288.3	6206.2	52.7	170.5	0.0	65.1	114.7	505.3	908.3
LESSER SNOW	0.0	0.0	8644.5	94.9	1234.0	0.0	9973.4	0.0	0.0	1403.5	0.0	88.1	0.0	1491.6
EMPEROR	210.5	2426.5	241.4	996.6	49.5	260.0	4184.4	105.2	693.3	0.0	0.0	105.2	0.0	903.7
BLACK BRANT	0.0	611.0	57.8	495.5	0.0	0.0	1164.3	0.0	714.4	15.2	0.0	12.2	0.0	741.8
TOTAL GEESE	8090.9	5394.4	15609.8	17240.7	6959.8	1309.2	54604.8	714.0	1859.4	1766.4	535.1	528.3	1066.6	6469.8
TUNDRA SWAN	7789.0	3079.7	6009.9	24338.6	15293.9	852.2	57363.2	1255.8	1211.0	284.1	2855.5	702.7	867.1	7176.0
SANDHILL CRANE	4032.0	1800.0	3084.0	4524.0	864.0	252.0	14556.0	1416.0	876.0	252.0	672.0	348.0	228.0	3792.0
DUCKS														
PINTAIL	1651.1	374.1	1465.1	9229.4	2278.1	369.9	15367.8	631.2	179.7	992.8	817.2	530.9	482.8	3634.5
MALLARD	348.4	551.2	335.4	6019.0	850.2	13.0	8117.2	218.4	384.8	174.2	694.2	314.6	26.0	1812.2
GADWALL	67.7	59.7	314.4	549.2	220.9	19.9	1231.8	0.0	17.9	19.9	45.8	91.5	0.0	175.1
WIGEON	0.0	40.3	24.5	1851.5	45.5	0.0	1961.8	29.8	22.8	0.0	397.3	75.3	66.5	591.5
SHOVELER	0.0	121.8	75.4	390.1	98.6	37.7	723.6	0.0	23.2	0.0	85.6	68.2	97.2	274.1
GR WING TEAL	11.9	2.8	6.3	479.5	51.8	21.7	574.0	0.0	21.0	0.0	34.3	53.9	0.0	109.2
BUFFLEHEAD	0.0	11.8	0.0	87.4	0.0	0.0	99.2	0.0	0.0	0.0	19.1	8.2	0.0	27.3
HRLEQUIN	0.0	5.3	0.0	54.5	0.0	0.0	59.9	0.0	17.3	0.0	0.0	9.3	0.0	26.6
GREATER SCAUP	76.2	91.8	13.4	4092.5	17.9	35.8	4327.7	264.3	58.2	0.0	860.2	20.2	257.6	1460.5
GOLDENEYE	0.0	41.6	0.0	2128.1	28.4	30.2	2228.3	126.6	24.6	0.0	383.7	0.0	0.0	534.9
OLDSQUAW	65.6	1275.7	0.0	1007.5	0.0	200.7	2549.5	32.8	146.7	0.0	447.8	19.3	0.0	646.6
W WING SCOTER	207.7	124.0	0.0	1785.6	0.0	145.7	2263.0	0.0	0.0	0.0	1980.9	12.4	179.8	2173.1
BLACK SCOTER	160.8	43.2	0.0	5176.8	62.4	223.2	5666.4	1370.4	52.8	0.0	2635.2	148.8	484.8	4692.0
SURF SCOTER	0.0	18.9	18.9	1150.8	8.4	10.5	1207.5	0.0	25.2	69.3	252.0	8.4	0.0	354.9
COMMON EIDER	0.0	580.7	0.0	66.4	16.6	0.0	663.6	0.0	353.9	0.0	0.0	0.0	0.0	353.9
KING EIDER	1560.1	4523.2	0.0	3005.9	0.0	1113.8	10203.1	0.0	1403.0	0.0	0.0	0.0	0.0	1403.0
SPECTAC EIDER	0.0	438.0	57.0	0.0	0.0	0.0	495.0	0.0	144.0	0.0	0.0	0.0	0.0	144.0
COMMON MERG	0.0	0.0	0.0	213.7	153.1	0.0	366.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RD BR MERG	0.0	6.2	16.9	194.0	4.6	0.0	221.8	0.0	0.0	0.0	9.2	6.2	0.0	15.4
TOTAL DUCKS	4149.4	8310.3	2327.4	37482.0	3836.5	2222.3	58327.8	2673.5	2875.1	1256.2	8662.3	1367.0	1594.6	18428.7

APPENDIX TABLE 22. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

(Source: Copp, 1988)

	SPRING							EARLY SUMMER						
SPECIES	SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON	0.0	774.2	0.0	1199.2	0.0	0.0	1973.4	0.0	0.0	0.0	0.0	30.4	0.0	30.4
RD THROT LOON	0.0	15.7	0.0	55.0	11.8	0.0	82.5	0.0	0.0	0.0	23.6	15.7	0.0	39.3
COMMON LOON	885.0	255.0	105.0	1567.5	52.5	37.5	2902.5	1387.5	622.5	0.0	90.0	157.5	75.0	2332.5
ARCTIC LOON	0.0	0.0	0.0	49.5	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COMMON MURRE	0.0	22.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SM SHOIREBIRD	0.0	1.8	0.0	2.6	2.0	0.0	6.4	0.0	0.0	0.0	0.7	0.5	0.0	1.2
LG SHOREBIRD	0.0	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	2.5	0.0	2.5
MEW GULL	0.0	0.0	0.0	4.5	0.0	0.0	4.5	0.0	2.5	0.0	0.0	0.0	0.0	2.5
SABINES GULL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLAUCOUS GULL	0.0	0.0	0.0	85.0	345.0	0.0	430.0	335.0	0.0	0.0	0.0	110.0	0.0	445.0
ARCTIC TERN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
TOTAL OTHER	885.0	1073.7	105.0	2963.4	411.3	37.5	5475.8	1722.5	625.0	0.0	114.3	317.3	75.0	2854.1
TOTAL GEESE	8090.9	5394.4	15609.8	17240.7	6959.8	1309.2	54604.8	714.0	1859.4	1766.4	535.1	528.3	1066.6	6469.8
TUNDRA SWAN	7789.0	3079.7	6009.9	24338.6	15293.9	852.2	57363.2	1255.8	1211.0	284.1	2855.5	702.7	867.1	7176.0
SANDHILL CRANE	4032.0	1800.0	3084.0	4524.0	864.0	252.0	14556.0	1416.0	876.0	252.0	672.0	348.0	228.0	3792.0
TOTAL DUCKS	4149.4	8310.3	2327.4	37482.0	3836.5	2222.3	58327.8	2673.5	2875.1	1256.2	8662.3	1367.0	1594.6	18428.7
TOTAL OTHER	885.0	1073.7	105.0	2963.4	411.3	37.5	5475.8	1722.5	625.0	0.0	114.3	317.3	75.0	2854.1

APPENDIX TABLE 22. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	MID SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	LATE SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	502.4	189.1	425.5	490.5	0.0	1607.5
LESSER CANADA	0.0	0.0	47.7	0.0	238.5	0.0	286.2	0.0	1431.0	302.1	0.0	100.7	0.0	1833.8
CACKLING	0.0	24.8	136.4	18.6	68.2	0.0	248.0	105.4	592.1	86.8	55.8	223.2	0.0	1063.3
LESSER SNOW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.8	0.0	0.0	0.0	128.8
EMPEROR	0.0	80.5	0.0	0.0	24.8	0.0	105.2	0.0	1795.1	222.8	0.0	321.9	0.0	2339.8
BLACK BRANT	0.0	130.7	0.0	0.0	0.0	0.0	130.7	0.0	948.5	0.0	0.0	0.0	0.0	948.5
TOTAL GEESE	0.0	236.0	184.1	18.6	331.5	0.0	770.2	105.4	5269.0	929.7	481.3	1136.3	0.0	7921.7
TUNDRA SWAN	0.0	1016.6	0.0	269.1	463.5	0.0	1749.2	747.5	8282.3	388.7	613.0	777.4	0.0	10808.9
SANDHILL CRANE	0.0	96.0	204.0	276.0	180.0	0.0	756.0	408.0	4512.0	72.0	0.0	192.0	0.0	5184.0
DUCKS														
PINTAIL	351.1	200.6	1308.3	395.0	183.9	83.6	2522.6	842.3	2537.3	645.8	1431.7	418.0	275.9	6150.9
MALLARD	44.2	413.4	0.0	104.0	137.8	0.0	699.4	88.4	3419.0	228.8	1768.0	826.8	405.6	6736.6
GADWALL	0.0	97.5	232.8	15.9	89.6	0.0	435.8	67.7	298.5	495.5	292.5	238.8	0.0	1393.0
WIGEON	0.0	7.0	33.3	511.0	96.3	0.0	647.5	0.0	75.3	0.0	413.0	176.8	0.0	665.0
SHOVELER	0.0	45.0	0.0	432.1	18.9	0.0	495.9	146.5	716.3	101.5	272.6	127.6	0.0	1364.5
GR WING TEAL	0.0	9.8	0.0	0.0	65.8	0.0	75.6	188.3	140.0	175.0	468.3	129.5	103.6	1204.7
BUFFLEHEAD	0.0	3.6	0.0	20.9	18.2	29.1	71.9	0.0	12.7	0.0	24.6	2.7	0.0	40.0
HRLEQUIN	0.0	5.3	0.0	0.0	0.0	0.0	5.3	0.0	131.7	0.0	0.0	0.0	21.3	153.0
GREATER SCAUP	452.5	35.8	0.0	2900.8	91.8	1812.2	5293.1	488.3	255.4	62.7	468.2	150.1	0.0	1424.6
GOLDENEYE	0.0	13.2	0.0	0.0	24.6	122.9	160.7	0.0	247.6	0.0	204.1	17.0	0.0	468.7
OLDSQUAW	0.0	127.4	0.0	349.3	46.3	77.2	600.2	0.0	1086.6	0.0	34.7	7.7	75.3	1204.3
W WING SCOTER	0.0	40.3	0.0	0.0	0.0	0.0	40.3	0.0	0.0	142.6	83.7	0.0	0.0	226.3
BLACK SCOTER	0.0	40.8	0.0	0.0	0.0	0.0	40.8	926.4	0.0	67.2	9.6	0.0	280.8	1284.0
SURF SCOTER	0.0	29.4	0.0	0.0	0.0	0.0	29.4	0.0	281.4	18.9	0.0	0.0	0.0	300.3
COMMON EIDER	0.0	116.1	0.0	0.0	0.0	0.0	116.1	0.0	293.1	0.0	0.0	71.9	0.0	365.0
KING EIDER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	307.0	0.0	0.0	0.0	0.0	307.0
SPECTAC EIDER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.0	0.0	0.0	0.0	0.0	102.0
COMMON MERG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.4	25.5	0.0	82.9
RD BR MERG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	166.3	6.2	0.0	172.5
TOTAL DUCKS	847.8	1185.3	1574.4	4729.1	773.1	2124.9	11234.7	2747.8	9903.8	1938.0	5694.7	2198.6	1162.4	23645.3

APPENDIX TABLE 22. (CONTINUED) MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	MID SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	LATE SUMMER SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON	0.0	60.7	0.0	0.0	0.0	0.0	60.7	0.0	60.7	0.0	0.0	0.0	0.0	60.7
RD THROT LOON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	0.0	0.0	0.0	0.0	15.7
COMMON LOON	0.0	247.5	0.0	0.0	0.0	60.0	307.5	502.5	2175.0	0.0	52.5	142.5	0.0	2872.5
ARCTIC LOON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COMMON MURRE	739.2	0.0	0.0	0.0	0.0	0.0	739.2	0.0	0.0	0.0	17.6	0.0	0.0	17.6
SM SHOIREBIRD	0.0	0.7	0.0	0.0	0.0	0.0	0.7	0.0	9.8	0.0	0.0	0.0	0.0	9.8
LG SHOREBIRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	8.8
MEW GULL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABINES GULL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLAUCOUS GULL	85.0	0.0	0.0	60.0	0.0	0.0	145.0	0.0	395.0	0.0	0.0	0.0	0.0	395.0
ARCTIC TERN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	9.8
TOTAL OTHER	824.2	308.9	0.0	60.0	0.0	60.0	1253.1	502.5	2674.7	0.0	70.1	142.5	0.0	3389.8
TOTAL GEESE	0.0	236.0	184.1	18.6	331.5	0.0	770.2	105.4	5269.0	929.7	481.3	1136.3	0.0	7921.7
TUNDRA SWAN	0.0	1016.6	0.0	269.1	463.5	0.0	1749.2	747.5	8282.3	388.7	613.0	777.4	0.0	10808.9
SANDHILL CRANE	0.0	96.0	204.0	276.0	180.0	0.0	756.0	408.0	4512.0	72.0	0.0	192.0	0.0	5184.0
TOTAL DUCKS	847.8	1185.3	1574.4	4729.1	773.1	2124.9	11234.7	2747.8	9903.8	1938.0	5694.7	2198.6	1162.4	23645.3
TOTAL OTHER	824.2	308.9	0.0	60.0	0.0	60.0	1253.1	502.5	2674.7	0.0	70.1	142.5	0.0	3389.8

APPENDIX TABLE 22. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS)BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	FALL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	TOTAL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
GEESE														
WHITE-FRONT	0.0	1903.0	295.5	413.7	768.3	94.6	3475.1	3971.5	4314.3	3374.6	7050.63	2494.0	786.0	21991.1
LESSER CANADA	180.2	763.2	704.9	577.7	339.2	545.9	3111.1	3916.7	2591.7	3349.6	8199.1	4589.8	1176.6	23823.5
CACKLING	468.1	198.4	465.0	217.0	9.3	195.3	1553.1	1354.7	1317.5	2517.2	2647.4	1153.2	988.9	9978.9
LESSER SNOW	0.0	19851.8	2827.3	0.0	33.9	962.8	23675.8	0.0	19851.8	13004.0	94.9	1356.0	962.8	35269.6
EMPEROR	0.0	631.4	0.0	55.7	0.0	148.6	835.7	315.7	5626.7	464.3	1052.3	501.4	408.5	8368.9
BLACK BRANT	0.0	109.4	0.0	39.5	0.0	0.0	149.0	0.0	2514.1	73.0	535.0	12.2	0.0	3134.2
TOTAL GEESE	648.3	23457.3	4292.7	1303.6	1150.7	1947.1	32799.7	9558.6	36216.1	22782.7	19579.4	10106.6	4322.8	102566.2
TUNDRA SWAN	4769.1	12094.6	3737.5	1465.1	508.3	822.3	23396.8	14561.3	25684.1	10420.2	29541.2	17745.7	2541.5	100493.9
SANDHILL CRANE	204.0	408.0	600.0	0.0	684.0	96.0	1992.0	6060.0	7692.0	4212.0	5472.0	2268.0	576.0	26280.0
DUCKS														
PINTAIL	1720.1	2976.2	627.0	1893.5	165.1	1598.9	8980.7	5195.7	6267.9	5039.0	13766.8	3576.0	2811.1	36656.5
MALLARD	174.2	1625.0	130.0	2886.0	83.2	1328.6	6227.0	873.6	6393.4	868.4	11471.2	2212.6	1773.2	23592.4
GADWALL	99.5	513.4	829.8	197.0	95.5	250.7	1986.0	234.8	987.0	1892.5	1100.5	736.3	270.6	5221.8
WIGEON	0.0	264.3	0.0	290.5	171.5	302.8	1029.0	29.8	409.5	57.8	3463.3	565.3	369.3	4894.8
SHOVELER	0.0	290.0	72.5	163.9	42.1	46.4	614.8	146.5	1196.3	249.4	1344.2	355.3	181.3	3472.8
GR WING TEAL	141.4	179.2	0.0	408.8	60.2	232.4	1022.0	341.6	352.8	181.3	1390.9	361.2	357.7	2985.5
BUFFLEHEAD	0.0	0.0	0.0	17.3	0.0	0.0	17.3	0.0	28.2	0.0	169.3	29.1	29.1	255.7
HRLEQUIN	0.0	0.0	0.0	77.1	0.0	0.0	77.1	0.0	159.6	0.0	131.7	9.3	21.3	321.9
GREATER SCAUP	226.2	416.6	0.0	781.8	15.7	71.7	1512.0	1507.5	857.9	76.2	9103.4	295.7	2177.3	14017.9
GOLDENEYE	0.0	41.6	32.1	757.9	79.4	104.0	1014.9	126.6	368.6	32.1	3473.8	149.3	257.0	4407.5
OLDSQUAW	0.0	119.7	0.0	0.0	0.0	75.3	194.9	98.4	2756.0	0.0	1839.3	73.3	428.5	5195.6
W WING SCOTER	260.4	164.3	0.0	1215.2	0.0	300.7	1940.6	468.1	328.6	142.6	5065.4	12.4	626.2	6643.3
BLACK SCOTER	1814.4	74.4	79.2	376.8	72.0	264.0	2680.8	4272.0	211.2	146.4	8198.4	283.2	1252.8	14364.0
SURF SCOTER	71.4	18.9	0.0	0.0	14.7	33.6	138.6	71.4	373.8	107.1	1402.8	31.5	44.1	2030.7
COMMON EIDER	0.0	204.6	0.0	0.0	0.0	88.5	293.1	0.0	1548.4	0.0	66.4	88.5	88.5	1791.7
KING EIDER	0.0	0.0	0.0	0.0	0.0	85.7	85.7	1560.1	6233.2	0.0	3005.9	0.0	1199.5	11998.8
SPECTAC EIDER	0.0	120.0	0.0	0.0	0.0	0.0	120.0	0.0	804.0	57.0	0.0	0.0	0.0	861.0
COMMON MERG	213.7	0.0	0.0	306.2	0.0	0.0	520.0	213.7	0.0	0.0	577.4	178.6	0.0	969.8
RD BR MERG	0.0	0.0	0.0	35.4	15.4	0.0	50.8	0.0	6.2	16.9	405.0	32.3	0.0	460.5
TOTAL DUCKS	4721.3	7008.1	1770.7	9407.4	814.7	4783.1	28505.4	15139.9	29282.6	8866.7	65975.5	8989.9	11887.4	140141.9

APPENDIX TABLE 22. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND STRATA, YUKON-KUSKOKWIM DELTA, 1987

SPECIES	FALL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL	TOTAL SOUTH COAST	MID COAST	NORTH COAST	KUSK	YUKON	BETHEL	Y-K TOTAL
OTHER														
Y BILLED LOON	0.0	0.0	0.0	0.0	60.7	0.0	60.7	0.0	895.6	0.0	1199.2	91.1	0.0	2185.9
RD THROT LOON	0.0	15.7	0.0	0.0	15.7	0.0	31.4	0.0	47.2	0.0	78.6	43.2	0.0	169.0
COMMON LOON	0.0	165.0	0.0	0.0	142.5	120.0	427.5	2775.0	3465.0	105.0	1710.0	495.0	292.5	8842.5
ARCTIC LOON	0.0	0.0	0.0	181.5	0.0	0.0	181.5	0.0	0.0	0.0	231.0	0.0	0.0	231.0
COMMON MURRE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	739.2	22.0	0.0	17.6	0.0	0.0	778.8
SM SHOIREBIRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	3.4	2.5	0.0	18.1
LG SHOREBIRD	0.0	138.8	0.0	0.0	0.0	0.0	138.8	0.0	152.5	0.0	0.0	2.5	0.0	155.0
MEW GULL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	4.5	0.0	0.0	7.0
SABINES GULL	0.0	12.3	0.0	0.0	0.0	0.0	12.3	0.0	12.3	0.0	0.0	0.0	0.0	12.3
GLAUCOUS GULL	0.0	20.0	0.0	0.0	0.0	0.0	20.0	420.0	415.0	0.0	145.0	455.0	0.0	1435.0
ARCTIC TERN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.8	0.0	10.5
TOTAL OTHER	0.0	351.7	0.0	181.5	218.9	120.0	872.2	3934.2	5034.0	105.0	3389.3	1090.0	292.5	13845.0
TOTAL GEESE	648.3	23457.3	4292.7	1303.6	1150.7	1947.1	32799.7	9558.6	36216.1	22782.7	19579.4	10106.6	4322.8	102566.2
TUNDRA SWAN	4769.1	12094.6	3737.5	1465.1	508.3	822.3	23396.8	14561.3	25684.1	10420.2	29541.2	17745.7	2541.5	100493.9
SANDHILL CRANE	204.0	408.0	600.0	0.0	684.0	96.0	1992.0	6060.0	7692.0	4212.0	5472.0	2268.0	576.0	26280.0
TOTAL DUCKS	4721.3	7008.1	1770.7	9407.4	814.7	4783.1	28505.4	15139.9	29282.6	8866.7	65975.5	8989.9	11887.4	140141.9
TOTAL OTHER	0.0	351.7	0.0	181.5	218.9	120.0	872.2	3934.2	5034.0	105.0	3389.3	1090.0	292.5	13845.0

APPENDIX TABLE 23 MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES, SEASON AND COMMUNITY, SEWARD PENINSULA-NORTON SOUND, 1989

	BREVIG MISSION				GOLOVIN				SHISHMAREF			
SPECIES	SUMMER	FALL	SPRING	TOTAL	SUMMER	FALL	SPRING	TOTAL	SUMMER	FALL	SPRING	TOTAL
GEESE												
WHITEFRONT	0	0	233.7	233.7	0	65.6	12.3	77.9	0	0	209.1	209.1
CANADA GEESE	0	51.8	488.4	540.2	0	395.9	395.9	791.8	0	747.4	791.8	1539.2
EMPEROR	0	0	172	172	0	0	30.1	30.1	0	0	0	0
BRANT	0	0	974.4	974.4	0	48.3	676.2	724.5	71.4	743.4	71.4	886.2
SNOW	0	0	572	572	0	0	24	24	0	0	248	248
TOTAL GEESE	0	51.8	2440.5	2492.3	0	509.8	1138.5	1648.3	71.4	1491	1320.3	2882.5
SWAN	0	0	31.5	31.5	0	84	126	210	0	0	0	0
CRANE	0	0	36	36	0	366	270	636	0	0	102	102
DUCKS												
PINTAIL	0	39	94.5	133.5	0	286.5	352.5	639	168	202.5	598.5	969
MALLARD	0	52.2	25.2	77.4	0	61.2	131.4	192.6	0	0	414	414
WIDGEON	0	0	0	0	0	0	0	0	0	0	0	0
TEAL	0	0	3	3	0	12	8.5	20.5	14	14	14	42
SCAUP	0	0	0	0	0	0	0	0	0	0	0	0
OLDSQUAW	0	0	0	0	0	0	0	0	0	0	0	0
SCOTER	0	0	9.6	9.6	0	1.6	0	1.6	0	107.2	0	107.2
EIDER	0	54.6	269.1	323.7	0	0	0	0	0	0	109.2	109.2
OTHER DUCK	0	0	0	0	0	9	9	18	0	0	0	0
TOTAL DUCKS	0	146	401.4	547.2	0	370.3	501.4	871.7	182	323.7	1135.7	1641.4
LOON				0				3				0
EGGS												
GULL EGGS				40.32				73.28				258.88
GEESE EGGS				3.08				5.5				0
DUCK EGGS				26.55				5.58				62.73
SWAN EGGS				14.26				2.48				0
MURRE EGGS				0				33.12				0
TERN EGGS				2.85				0				0
PLOVER EGGS				5.6				0				4.69
SNIPE EGGS				4.8				0				0
TOTAL EGGS				97.46				119.96				326.3

APPENDIX TABLE 24. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY SPECIES AND COMMUNITY, UPPER YUKON-KOYUKUK- LOWER TANANA 1984

BIRD SPECIES	ALLAKAKET SPRING	SUMMER	FALL	TOTAL	BETTLES SPRING	SUMMER	FALL	TOTAL
GEESE								
CANADA GOOSE	1118.5	30.2	356.7	1505.4	40.5	0.0	23.1	63.6
SNOW GOOSE	169.3	0.0	0.0	169.3	0.0	0.0	0.0	0.0
BLACK BRANT	0.0	0.0	6.0	6.0	0.0	0.0	0.0	0.0
WHITE-FRONTED GOOSE	846.4	30.2	78.6	955.3	11.6	0.0	0.0	11.6
TOTAL GEESE	2134.2	60.5	441.4	2636.0	52.0	0.0	23.1	75.1
CRANE	39.9	0.0	39.9	79.8	0.0	0.0	0.0	0.0
SWAN	60.5	0.0	0.0	60.5	0.0	0.0	0.0	0.0
DUCKS								
MALLARD	143.3	18.1	105.2	266.6	24.3	0.0	0.0	24.3
PINTAIL	302.9	27.2	127.0	457.1	60.7	0.0	0.0	60.7
GREEN-WINGED TEAL	29.0	0.0	14.5	43.5	0.0	0.0	0.0	0.0
BLUE WINGED TEAL	20.0	0.0	36.3	56.2	0.0	0.0	0.0	0.0
AMERICAN WIGEON	217.7	0.0	114.3	331.9	0.0	0.0	0.0	0.0
SHOVELER	30.8	0.0	9.1	39.9	0.0	0.0	0.0	0.0
REDHEAD	0.0	0.0	12.7	12.7	0.0	0.0	0.0	0.0
RING-NECKED DUCK	10.9	0.0	21.8	32.6	0.0	0.0	0.0	0.0
CANVASBACK	21.8	0.0	3.6	25.4	0.0	0.0	0.0	0.0
SCAUP	172.3	0.0	41.7	214.0	0.0	0.0	0.0	0.0
GOLDENEYE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BUFFLEHEAD	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0
OLDSQUAW	469.8	0.0	43.5	513.3	6.9	0.0	17.3	24.3
HARLEQUIN	1.8	0.0	1.8	3.6	0.0	0.0	0.0	0.0
COMMON SCOTER	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0
SURF SCOTER	199.5	14.5	29.0	243.0	3.5	0.0	0.0	3.5
WHITE WINGED SCOTER	25.4	1.8	0.0	27.2	0.0	0.0	0.0	0.0
RED-BREASTED MERGANS	1.8	0.0	9.1	10.9	0.0	0.0	0.0	0.0
TOTAL DUCKS	1650.5	61.7	569.5	2281.7	95.4	0.0	17.3	112.7
GEESE	2134.2	60.5	441.4	2636.0	52.0	0.0	23.1	75.1
DUCKS	1650.5	61.7	569.5	2281.7	95.4	0.0	17.3	112.7
CRANE	39.9	0.0	39.9	79.8	0.0	0.0	0.0	0.0
SWAN	60.5	0.0	0.0	60.5	0.0	0.0	0.0	0.0
TOTAL	3885.1	122.1	1050.8	5058.0	147.4	0.0	40.5	187.9

APPENDIX TABLE 25. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
SOUTHEAST ARCHIPELAGO										
Angoon	84	4	267	0	4	0	275		0	
Angoon	87	36	193				229	-16.73	0	
Haines	83	94	1715	13			1822		0	
Haines	87	0	533			60	593	-67.45	0	
Hoonah	85	23	230		0		253			
Hoonah	87	63	591			5	659	160.47	225	
Kake	85	32	215				247			
Kake	87	8	255			0	263	6.48	0	
Klawock	84	33	80	0	0	0	113		87	
Klawock	87	80	205	0	0		285	152.21	630	624.14
Klukwan	83	7	40	0			47		0	
Klukwan	87	12	31				43	-8.51	0	
Tenakee Springs	84	2	4	0	0	0	6		0	
Tenakee Springs	87	25	111			10	146	2333.33	0	
Yakutat	84	156	2682	25	4	0	2867		771	
Yakutat	87	125	872			49	1046	-63.52	1022	32.56
KODIAK ISLAND										
Akhiok	83	253	859				1112		327	
Akhiok	86	0	38				38	-96.58	50	-84.71
Karluk	82	5	1474				1479		36	
Karluk	86	0	247				247	-83.30	763	2019.44
Larsen Bay	82	3	934				937		509	
Larsen Bay	86	0	209				209	-77.69	105	-79.37
Old Harbor	82	194	1954				2148		1210	
Old Harbor	86	25	1198				1223	-43.06	945	-21.90
Ouzinkie	82	228	2599				2827		1638	
Ouzinkie	86	66	1921				1987	-29.71	2268	38.46
Port Lions	82	3	890				893		138	
Port Lions	86	0	611				611	-31.58	176	27.54
PRINCE WILLIAM SOUND										
Chenega Bay	84	4	95	3		1	103		82	
Chenega Bay	85	6	151	0			157	52.43	32	-60.98
LOWER KENAI PENINSULA										
English Bay	81		23			32	55			
English Bay	87	0	530			29	559	916.36	135	
Port Graham	81		216			48	264			
Port Graham	87	0	392			141	533	101.89	182	
BRISTOL BAY										
Nondalton	73	90	80				170			
Nondalton	81	50	164				214	25.88		
Nondalton	83	93	612	0	5		710	231.78	332	
YUKON-KUSKOKWIM DELTA										
	85	16753	33188	3289	3531	3165	59926		5409	
	86	15198	45048	3477	5363	2626	71712	19.67	7157	32.32
	87	19020	64167	2191	6721	2489	94588	31.90	3641	-49.13
	89	19240	38378	3193	6034	1705	68550	-27.53		

APPENDIX TABLE 25. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES
CONTINUED

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
COPPER RIVER BASIN										
Chisitochina	82	7	31				38			
Chisitochina	87	10	45	10	0		65	71.05		
Chitina	82	0	15				15			
Chitina	87	2	24	0	0		26	73.33		
Copper Center	82	0	48				48			
Copper Center	87	45	183	15	0		243	406.25		
East Glenn Highway	82	0	4				4			
East Glenn Highway	87	13	145	33	0		191	4675.00		
Gakona	82	0	77				77			
Gakona	87	0	140	0	0		140	81.82		
Glennallen	82	0	26				26			
Glennallen	87	0	40	0	0		40	53.85		
Gulkana	82	0	44				44			
Gulkana	87	22	36	0	0		58	31.82		
Kenny Lake	82	0	35				35			
Kenny Lake	87	0	90	0	0		90	157.14		
Lake Louise	82	0	63				63			
Lake Louise	87	0	12	0	0		12	-80.95		
McCarthy Road	82	3	30				33			
McCarthy Road	87	0	46	0	0		46	39.39		
Mentasta Lake	82	4	99				103			
Mentasta	87	0	54	0	0		54	-47.57		
Nabesna Road	82	0	0				0			
Nabesna Road	87	0	0	0	0		0			
Paxson-Sourdough	82	20	134				154			
Paxson-Sourdough	87	6	275	21	0		302	96.10		
Slana	82	0	20				20			
Slana	87	0	0	0	0		0	-100.00		
South Wrangell Mountain	82	0	16				16			
South Wrangell Mountain	87	8	16	0	0		24	50.00		
Tonsina	82	0	71				71			
Tonsina	87	2	102				104	46.48		
UPPER YUKON-KOYUKUK-LOWER TANANA										
Allakaket	82	440	956				1396			
Allakaket	83	337	1273	6			1616	15.76		
Allakaket	84	527	1521	15	12		2075	28.40		
Bettles	82	15	45				60			
Bettles	83	4	32	0	0		36	-40.00		
Bettles	84	15	75	0	0		90	150.00		
UPPER TANANA										
No.Wrangell Mt(Chisana)	82									
Chisana	87									
Northway	83	235	2963	6			3204			
Northway	87	174	1909	2	0		2085	-34.93		
Tanacross	84	0	200				200			
Tanacross	87	24	157	0	0		181	-9.50	12	

APPENDIX TABLE 25. MIGRATORY BIRD HARVESTS (NUMBER OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES
CONTINUED

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
NORTHWEST ARCTIC										
Kivalina	82	182	134	4			320		470	
Kivalina	83	209	210	1		18	438	36.88	205	-56.38
ARCTIC SLOPE										
Barrow (1)	87	2724	5285				8009			
Barrow (1)	88	3194	4320				7514	-6.18		
Kaktovik	86	647	317				964			
Kakktovik	87	371	175				546	-43.36	4	
Wainwright (1)	88	1337	591				1928			
Wainwright (1)	89	1439	1099			1	2539	31.69		

(1) Barrow and Wainwright harvest estimates from an ongoing research project for U.S.Minerals Management Service by S.R.Braund & Associates.

APPENDIX TABLE 26. MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
SOUTHEAST ARCHIPELAGO										
Angoon	84	19	400	0	30	0	449		0	
Angoon	87	183	290	0	0	0	473	5.35	0	
Haines	83	752	2574	66			3392			
Haines	87	0	799			91	890	-73.76		
Hoonah	85	116	346		0		462			
Hoonah	87	319	887			8	1214	162.77	45	
Kake	85	159	323				482			
Kake	87	43	383				426	-11.62		
Klawock	84	262	80	0	0	0	342		17	
Klawock	87	400	307	0	0	0	707	106.73	126	641.18
Klukwan	83	59	59	0			118			
Klukwan	87	60	47				107	-9.32		
Tenakee Springs	84	6	10	0	0	0	16		0	
Tenakee Springs	87	128	167	0	0	15	310	1837.50	0	
Yakutat	84	778	4024	203	29	0	5034		154	
Yakutat	87	628	1308			73	2009	-60.09	204	32.47
KODIAK ISLAND										
Akhiok	83	1266	2147				3413		16	
Akhiok	86	0	94				94	-97.25	2	-87.50
Karluk	82	13	3019				3032		1	
Karluk	86	0	618				618	-79.62	38	3700.00
Larsen Bay	82	13	2335				2348		25	
Larsen Bay	86	0	522				522	-77.77	5	-80.00
Old Harbor	82	971	4885				5856		60	
Old Harbor	86	123	2995				3118	-46.76	48	-20.00
Ouzinkie	82	1138	6497				7635		82	
Ouzinkie	86	331	4803				5134	-32.76	113	37.80
Port Lions	82	16	2225				2241		7	
Port Lions	86	0	1529				1529	-31.77	9	28.57
PRINCE WILLIAM SOUND										
Chenega Bay	84	20	143	30		8	201		4	
Chenega Bay	85	32	226				258	28.36	2	-50.00
LOWER KENAI PENINSULA										
English Bay	81		23			32	55			
English Bay	87	0	524			47	571	938.18	20	
Port Graham	81		325			48	373			
Port Graham	87	0	394			194	588	57.64	27	
BRISTOL BAY										
Nondalton	73	270	121				391			
Nondalton	81	149	246				395	1.02		
Nondalton	83	278	918	0	93		1289	226.33	50	
YUKON-KUSKOKWIM DELTA										
	85	88318	77650	39468	52788	6951	265175		898.45	
	86	80224	102744	41724	80177	8263	313132	18.09	1406.20	56.51
	87	102572	140082	26290	100480	13181	382605	22.19	664.05	-52.78
	89	94728	87827	38316	87493	8463	316827	-17.19		

APPENDIX TABLE 26. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
COPPER RIVER BASIN										
Chisitochina	82	35	47				82			
Chisitochina	87	12	28	62	0		102	24.39		
Chitina	82	0	22				22			
Chitina	87	2	17	0	0		19	-13.64		
Copper Center	82	0	72				72			
Copper Center	87	108	130	90	0		328	355.56		
East Glenn Highway	82	0	7				7			
East Glenn Highway	87	16	98	201	0		315	4400.00		
Gakona	82	0	115				115			
Gakona	87	0	98				98	-14.78		
Glennallen	82	0	40				40			
Glennallen	87	0	24				24	-40.00		
Gulkana	82	0	66				66			
Gulkana	87	26	36				62	-6.06		
Kenny Lake	82	0	53				53			
Kenny Lake	87	0	63				63	18.87		
Lake Louise	82	0	95				95			
Lake Louise	87	0	10				10	-89.47		
McCarthy Road	82	14	46				60			
McCarthy Road	87	0	36				36	-40.00		
Mentasta Lake	82	22	148				170			
Mentasta	87	0	46				46	-72.94		
Nabesna Road	82	0	0				0			
Nabesna Road	87	0	0				0			
Paxson-Sourdough	82	99	201				300			
Paxson-Sourdough	87	12	275	21	0		308	2.67		
Slana	82	0	29				29			
Slana	87	0	0				0	-100.00		
South Wrangell Mountain	82	0	24				24			
South Wrangell Mountain	87	10	13	0	0		23	-4.17		
Tonsina	82	0	106				106			
Tonsina	87	3	76				79	-25.47		
UPPER YUKON-KOYUKUK-LOWER TANANA										
Allakaket	82	2201	1434				3635			
Allakaket	83	2432	1795.9	31.2	0		4259.1	17.17		
Allakaket	84	2636	2281.7	79.8	60.5		5058	18.76		
Bettles	82	75	68				143			
Bettles	83	18.6	48.3	0	0		66.9	-53.22		
Bettles	84	75.1	112.7	0	0		187.8	180.72		
UPPER TANANA										
No.Wrangell Mt(Chisana)	82									
Chisana	87									
Northway	83	1175	7407.5	30			8612.5			
Northway	87	257	1910	12	0		2179	-74.70		
Tanacross	84	0	300				300			
Tanacross	87	38	157	0	0		195	-35.00	2	

APPENDIX TABLE 26. (CONTINUED)

MIGRATORY BIRD HARVESTS (POUNDS OF BIRDS) BY YEAR FOR SELECTED ALASKA COMMUNITIES

	STUDY YEAR	GEESE	DUCKS	CRANES	SWANS	OTHER	TOTAL	PERCENT CHANGE PREVIOUS YEAR	MIGRATORY BIRD EGGS	PERCENT CHANGE PREVIOUS YEAR
NORTHWEST ARCTIC										
Kivalina	82	427	272	23			722		135	
Kivalina	83	614	483	6		39	1142	58.17	62	-54.07
ARCTIC SLOPE										
Barrow (1)	87	12078	7928				20006			
Barrow (1)	88	14054	6480				20534	2.64		
Kaktovik	86	2914	4476				7390			
Kakktovik	87	1410	263				1673	-77.36	1	
Wainwright (1)	88	5166	886				6052			
Wainwright (1)	89	5426	1649			3	7078	16.95		

(1) Barrow and Wainwright harvest estimates from an ongoing research project for U.S.Minerals Management Service by S.R.Braund & Associates.

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
SOUTHEAST ARCHIIPELAGO					
Angoon*	ADOL	85	652	Southeast	Rural
Bal.of Petersburg Census SA*	ADOL	85	274	Southeast	Rural
Bal.of Wrangell Census Subarea*	ADOL	85	193	Southeast	Rural
Beecher Pass*	ADFGSD	87	44	Southeast	Rural
Cape Pole	ADOL	85	50	Southeast	Rural
Coffman Cove	ADOL	85	272	Southeast	Rural
Craig*	ADOL	85	1131	Southeast	Rural
Edna Bay*	ADFGSD	87	66	Southeast	Rural
Elfin Cove	ADOL	85	47	Southeast	Rural
Gustavus	ADOL	85	217	Southeast	Rural
Haines*	ADOL	85	1991	Southeast	Rural
Hollis*	ADFGSD	87	75	Southeast	Rural
Hoonah	ADOL	85	917	Southeast	Rural
Hydaburg	ADOL	85	463	Southeast	Rural
Hyder*	ADOL	85	81	Southeast	Rural
Kake	ADOL	85	634	Southeast	Rural
Kasaan	ADOL	85	83	Southeast	Rural
Klawock*	ADOL	85	716	Southeast	Rural
Klukwan	ADOL	85	153	Southeast	Rural
Metlakatla*	ADOL	85	1428	Southeast	Rural
Meyers Chuck	ADOL	85	53	Southeast	Rural
North Whale Pass	ADOL	85	83	Southeast	Rural
Pelican	ADOL	85	234	Southeast	Rural
Petersburg*	ADOL	85	3186	Southeast	Rural
Point Baker	ADFGSD	87	35	Southeast	Rural
Port Protection	ADFGSD	87	58	Southeast	Rural
Port Alexander	ADOL	85	131	Southeast	Rural
Saxman	ADOL	85	273	Southeast	Rural
Sitka	ADOL	85	8160	Southeast	Rural
Skagway	ADOL	85	637	Southeast	Rural
Tenakee Springs	ADOL	85	142	Southeast	Rural
Thorne Bay	ADOL	85	412	Southeast	Rural
Wrangell	ADOL	85	2387	Southeast	Rural
Yakutat*	ADOL	85	682	Southeast	Rural
TOTAL			25960		
PRINCE WILLIAM SOUND					
Chenega Bay *	ADOL	85	60	Southcentral	Rural
Cordova* (includes Eyak)	ADOL	85	2307	Southcentral	Rural
San Juan Bay*	ADFGSD	84	17	Southcentral	Rural
Tatitlek	ADOL	85	112	Southcentral	Rural
TOTAL			2496		
LOWER KENAI PENINSULA					
English Bay	ADOL	85	192	Southcentral	Rural
Port Graham	ADOL	85	188	Southcentral	Rural
Seldovia	ADOL	85	403	Southcentral	Rural
TOTAL			783		

APPENDIX TABLE 27. (CONTINUED)

POPULATION OF ALASKA COMMUNITIES BY REGION AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
KODIAK ISLAND					
Akhiok	ADOL	85	109	Southwest	Rural
Bal.of Kodiak Island Census SA	ADOL	85	3727	Southwest	Rural
Karluk	ADOL	85	114	Southwest	Rural
Kodiak City	ADOL	85	6173	Southwest	Rural
Kodiak Coast Guard Station	ADOL	85	1731	Southwest	Rural
Larsen Bay	ADOL	85	217	Southwest	Rural
Old Harbor	ADOL	85	344	Southwest	Rural
Ouzinkie	ADOL	85	235	Southwest	Rural
Port Lions	ADOL	85	302	Southwest	Rural
TOTAL			12952		
ALEUTIAN-PRIBILOF ISLANDS					
Adak Station	ADOL	85	4665	Southwest	Rural
Akutan	ADOL	85	80	Southwest	Rural
Atka	ADOL	85	93	Southwest	Rural
Attu	ADOL	85	31	Southwest	Rural
Bal.of Aleutian Island Census Area	ADOL	85	49	Southwest	Rural
Nikolski	ADOL	85	46	Southwest	Rural
Saint George	ADOL	85	191	Southwest	Rural
Saint Paul	ADOL	85	466	Southwest	Rural
Shemya Station CDP	ADOL	85	613	Southwest	Rural
Unalaska	ADOL	85	1331	Southwest	Rural
TOTAL			7565		
ALASKA PENINSULA					
Chignik Bay	ADOL	85	129	Southwest	Rural
Chignik Lagoon	ADOL	85	40	Southwest	Rural
Chignik Lake	ADOL	85	164	Southwest	Rural
Cold Bay	ADOL	85	157	Southwest	Rural
Egegik	ADOL	85	112	Southwest	Rural
False Pass	ADOL	85	77	Southwest	Rural
Ivanof Bay	ADOL	85	49	Southwest	Rural
King Cove	ADOL	85	547	Southwest	Rural
King Salmon	ADOL	85	648	Southwest	Rural
Naknek	ADOL	85	382	Southwest	Rural
Nelson Lagoon	ADOL	85	44	Southwest	Rural
Perryville	ADOL	85	137	Southwest	Rural
Pilot Point	ADOL	85	79	Southwest	Rural
Port Heiden	ADOL	85	108	Southwest	Rural
Sand Point	ADOL	85	671	Southwest	Rural
South Naknek	ADOL	85	195	Southwest	Rural
Ugashik*	ADFGSD	87	10	Southwest	Rural
TOTAL			3549		
BRISTOL BAY					
Aleknagik	ADOL	85	180	Southwest	Rural
Bal.of Bristol Bay Census Area *	ADOL	85	34	Southwest	Rural
Bal.of Dillingham Census Area*	ADOL	85	118	Southwest	Rural
Clark's Point	ADOL	85	79	Southwest	Rural

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
Dillingham	ADOL	85	2141	Southwest	Rural
Ekwok	ADOL	85	107	Southwest	Rural
Igiugig	ADOL	85	38	Southwest	Rural
Iliamna	ADOL	85	126	Southwest	Rural
Kokhanok	ADOL	85	68	Southwest	Rural
Koliganek	ADOL	85	161	Southwest	Rural
Levelock	ADOL	85	109	Southwest	Rural
Manokotak	ADOL	85	309	Southwest	Rural
New Stuyahok	ADOL	85	339	Southwest	Rural
Newhalen	ADOL	85	165	Southwest	Rural
Nondalton	ADOL	85	234	Southwest	Rural
Pedro Bay	ADOL	85	70	Southwest	Rural
Port Alsworth*	ADFGSD	86	67	Southwest	Rural
Portage Creek	ADOL	85	35	Southwest	Rural
Togiak	ADOL	85	556	Southwest	Rural
Twin Hills	ADOL	85	44	Southwest	Rural
TOTAL			4980		
YUKON-KUSKOKWIM DELTA					
SOUTH COAST					
Eek	ADOL	85	257	Western	Rural
Kipnuk	ADOL	85	408	Western	Rural
Kongiganak	ADOL	85	291	Western	Rural
Kwigillingok	ADOL	85	244	Western	Rural
Tuntutuliak	ADOL	85	293	Western	Rural
TOTAL			1493		
ADDITIONAL SOUTH COAST					
Goodnews Bay	ADOL	85	241	Western	Rural
Platinum	ADOL	85	65	Western	Rural
Quinhagak	ADOL	85	453	Western	Rural
TOTAL			759		
MID COAST					
Chefornak	ADOL	85	277	Western	Rural
Chevak	ADOL	85	532	Western	Rural
Hooper Bay	ADOL	85	686	Western	Rural
Mekoryuk	ADOL	85	152	Western	Rural
Newtok	ADOL	85	207	Western	Rural
Nightmute	ADOL	85	153	Western	Rural
Scammon Bay	ADOL	85	304	Western	Rural
Toksook Bay	ADOL	85	362	Western	Rural
Tununak	ADOL	85	318	Western	Rural
TOTAL			2991		
NORTH COAST					
Alakanuk	ADOL	85	556	Western	Rural
Emmonak	ADOL	85	613	Western	Rural
Kotlik	ADOL	85	409	Western	Rural
Sheldon Point	ADOL	85	124	Western	Rural
TOTAL			1702		

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
LOWER KUSKOKWIM RIVER					
Akiachak	ADOL	85	459	Western	Rural
Akiak	ADOL	85	289	Western	Rural
Aniak	ADOL	85	481	Western	Rural
Atmautluak	ADOL	85	234	Western	Rural
Kasigluk	ADOL	85	405	Western	Rural
Kwethluk	ADOL	85	546	Western	Rural
Lower Kalskag	ADOL	85	281	Western	Rural
Napakiak	ADOL	85	299	Western	Rural
Napaskiak	ADOL	85	303	Western	Rural
Nunapitchuk	ADOL	85	356	Western	Rural
Oscarville	ADOL	85	63	Western	Rural
Tuluksak	ADOL	85	321	Western	Rural
Upper Kalskag	ADOL	85	154	Western	Rural
TOTAL			4191		
YUKON RIVER					
Marshall (Fortuna Ledge)	ADOL	85	281	Western	Rural
Mountain Village	ADOL	85	682	Western	Rural
Pilot Station	ADOL	85	425	Western	Rural
Pitka's Point	ADOL	85	106	Western	Rural
Russian Mission	ADOL	85	231	Western	Rural
Saint Marys (Andreafsky)	ADOL	85	458	Western	Rural
TOTAL			2183		
Bethel	ADOL	85	4006	Western	Rural
YUKON-KUKSKOKWIM TOTAL			17325		
UPPER COOK INLET					
Western Susitna	ADFGSD	85	165	Southcentral	Rural
Tyonek	ADOL	85	269	Southcentral	Rural
TOTAL			434		
UPPER KUSKOKWIM					
Bal.of Aniak Census Sub-Area	ADOL	85	64	Western	Rural
Bal. of McGrath-Holy Cross CSA	ADOL	85	102	Interior	Rural
Chuathbaluk	ADOL	85	124	Western	Rural
Crooked Creek	ADOL	85	126	Western	Rural
Lake Minchumina*	ADFGSD	82	35	Interior	Rural
Lime Village	ADOL	85	48	Western	Rural
McGrath	ADOL	85	509	Interior	Rural
Nikolai	ADOL	85	122	Interior	Rural
Red Devil	ADOL	85	42	Western	Rural
Sleetmute	ADOL	85	130	Western	Rural
Sparrevohn Air Force Base	ADOL	85	15	Western	Rural
Stony River	ADOL	85	92	Western	Rural
Takotna	ADOL	85	54	Interior	Rural
Tatalina Station CDP	ADOL	85	13	Interior	Rural
Telida	ADOL	85	38	Interior	Rural
TOTAL			1514		

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
UPPER YUKON-KOYUKUK-LOWER TANANA					
Allakaket (includes Alatna)	ADOL	85	188	Interior	Rural
Anvik	ADOL	85	83	Interior	Rural
Arctic Village	ADOL	85	132	Interior	Rural
Bal.of Koyukuk-Mid Yukon CSA *	ADOL	85	864	Interior	Rural
Bal.of Yukon Flats CSA	ADOL	85	41	Interior	Rural
Beaver	ADOL	85	80	Interior	Rural
Bettles	ADOL	85	86	Interior	Rural
Birch Creek	ADOL	85	29	Interior	Rural
Campion Station	ADOL	85	12	Interior	Rural
Central	ADOL	85	42	Interior	Rural
Chalkyitsik	ADOL	85	94	Interior	Rural
Chicken	ADOL	85	48	Interior	Rural
Circle	ADOL	85	94	Interior	Rural
Eagle	ADOL	85	194	Interior	Rural
Eagle Village	ADOL	85	79	Interior	Rural
Fort Yukon	ADOL	85	678	Interior	Rural
Galena	ADOL	85	947	Interior	Rural
Grayling	ADOL	85	225	Interior	Rural
Holy Cross	ADOL	85	238	Interior	Rural
Hughes	ADOL	85	92	Interior	Rural
Huslia	ADOL	85	272	Interior	Rural
Indian Mountain CDP	ADOL	85	13	Interior	Rural
Kaltag	ADOL	85	278	Interior	Rural
Koyukuk	ADOL	85	143	Interior	Rural
Manley Hot Springs	ADOL	85	88	Interior	Rural
Minto	ADOL	85	209	Interior	Rural
Nenana	ADOL	85	544	Interior	Rural
Nulato	ADOL	85	368	Interior	Rural
Rampart	ADOL	85	59	Interior	Rural
Ruby	ADOL	85	241	Interior	Rural
Shageluk	ADOL	85	144	Interior	Rural
Stevens Village	ADOL	85	97	Interior	Rural
Tanana	ADOL	85	425	Interior	Rural
Venetie	ADOL	85	237	Interior	Rural
Wiseman*	ADFGSD	83	25	Interior	Rural
TOTAL			7389		
SEWARD-NORTON SOUND					
Balance of Nome Census area	ADOL	85	122	Arctic	Rural
Brevig Mission	ADOL	85	165	Arctic	Rural
Elim	ADOL	85	237	Arctic	Rural
Golovin	ADOL	85	131	Arctic	Rural
Koyuk	ADOL	85	202	Arctic	Rural
Nome	ADOL	85	3236	Arctic	Rural
Port Clarence	ADOL	85	39	Arctic	Rural
Saint Michael	ADOL	85	287	Arctic	Rural
Shaktoolik	ADOL	85	163	Arctic	Rural
Shishmaref	ADOL	85	410	Arctic	Rural

APPENDIX TABLE 27. (CONTINUED)

POPULATION OF ALASKA COMMUNITIES BY REGION AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
Stebbins	ADOL	85	372	Arctic	Rural
Teller	ADOL	85	247	Arctic	Rural
Unalakleet	ADOL	85	759	Arctic	Rural
Wales	ADOL	85	143	Arctic	Rural
White Mountain	ADOL	85	164	Arctic	Rural
TOTAL			6677		
BERING STRAITS					
Diomede	ADOL	85	158	Arctic	Rural
Gambell	ADOL	85	494	Arctic	Rural
Savoonga	ADOL	85	487	Arctic	Rural
TOTAL			1139		
NORTHWEST ARCTIC					
Ambler	ADOL	85	255	Arctic	Rural
Bal.of Northwest Arctic Borough	ADOL	85	85	Arctic	Rural
Buckland	ADOL	85	248	Arctic	Rural
Deering	ADOL	85	153	Arctic	Rural
Kiana	ADOL	85	392	Arctic	Rural
Kivalina	ADOL	85	285	Arctic	Rural
Kobuk	ADOL	85	65	Arctic	Rural
Kotzebue	ADOL	85	2633	Arctic	Rural
Noatak	ADOL	85	330	Arctic	Rural
Noorvik	ADOL	85	529	Arctic	Rural
Selawik	ADOL	85	589	Arctic	Rural
Shungnak	ADOL	85	226	Arctic	Rural
TOTAL			5790		
ARCTIC SLOPE					
Anaktuvuk Pass	ADOL	85	238	Arctic	Rural
Atqasuk	ADOL	85	190	Arctic	Rural
Bal.of Barrow-Point Hope CSA	ADOL	85	19	Arctic	Rural
Bal.of Prudhoe Bay-Kaktovik CSA	ADOL	85	101	Arctic	Rural
Barrow	ADOL	85	3075	Arctic	Rural
Cape Lisburne	ADOL	85	11	Arctic	Rural
Deadhorse	ADOL	85	65	Arctic	Rural
Kaktovik	ADOL	85	209	Arctic	Rural
Nuiqsut	ADOL	85	337	Arctic	Rural
Point Hope	ADOL	85	597	Arctic	Rural
Point Lay	ADOL	85	104	Arctic	Rural
Prudhoe Bay	ADOL	85	56	Arctic	Rural
Wainwright	ADOL	85	508	Arctic	Rural
TOTAL			5510		
COPPER RIVER BASIN					
Chistochina	ADFGSD	87	79	Southcentral	Rural
Chitina	ADFGSD	87	35	Southcentral	Rural
Copper Center	ADFGSD	87	493	Southcentral	Rural
East Glenn Highway	ADFGSD	87	217	Southcentral	Rural
Gakona	ADFGSD	87	209	Southcentral	Rural

APPENDIX TABLE 27. (CONTINUED)

POPULATION OF ALASKA COMMUNITIES BY REGION AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
Glennallen	ADFGSD	87	469	Southcentral	Rural
Gulkana	ADFGSD	87	67	Southcentral	Rural
Kenny Lake *	ADFGSD	87	321	Southcentral	Rural
Lake Louise*	ADFGSD	87	39	Southcentral	Rural
McCarthy*	ADFGSD	87	38	Southcentral	Rural
Mentasta*	ADFGSD	87	77	Southcentral	Rural
Mentasta Pass*	ADFGSD	87	26	Southcentral	Rural
Nabesna Raod	ADFGSD	87	37	Southcentral	Rural
No Slana Homestead	ADFGSD	87	61	Southcentral	Rural
Paxson*	ADFGSD	87	39	Southcentral	Rural
Slana	ADFGSD	87	57	Southcentral	Rural
Sourdough*	ADFGSD	87	26	Southcentral	Rural
So Slana Homestead	ADFGSD	87	186	Southcentral	Rural
So Wrangell Mountain	ADFGSD	87	48	Southcentral	Rural
Tazlina*	ADFGSD	87	365	Southcentral	Rural
Tonsina	ADFGSD	87	297	Southcentral	Rural
West Glenn Highway	ADFGSD	87	281	Southcentral	Rural
TOTAL			3467		
PARKS HIGHWAY					
Anderson	ADOL	85	566	Interior	Rural
Cantwell	ADOL	85	91	Southcentral	Rural
Chase*	ADFGSD	86	79	Southcentral	Rural
Gold Creek*	ADFGSD	86	12	Southcentral	
Healy	ADOL	85	420	Interior	Nonrural
Hurricane-Broad Pass*	ADFGSD	86	41	Southcentral	
McKinley Park Village	ADOL	85	65	Interior	Rural
TOTAL			1274		
UPPER TANANA					
Chisana*	ADFGSD	87	13	Interior	Rural
Dot Lake	ADOL	85	77	Interior	Rural
Healy Lake	ADOL	85	37	Interior	Rural
Northway	ADOL	85	239	Interior	Rural
Tanacross	ADOL	85	149	Interior	Rural
Tetlin	ADOL	85	89	Interior	Rural
Tok	ADOL	85	692	Interior	Rural
TOTAL			1296		

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
URBAN PLACES					
FAIRBANKS AREA					
Bal. of Eielson Reservation CSA	ADOL	85	132	Interior	Nonrural
Bal.of Fairbanks-Northstar CSA	ADOL	85	29634	Interior	Nonrural
Bal.of Southeast Fairbanks CA	ADOL	85	1933	Interior	Nonrural
Big Delta	ADOL	85	388	Interior	Nonrural
Delta Junction	ADOL	85	1299	Interior	Nonrural
Eielson Air Force Base	ADOL	85	4932	Interior	Nonrural
Ester	ADOL	85	285	Interior	Nonrural
Fairbanks (includes College)	ADOL	85	33745	Interior	Nonrural
Fort Greely	ADOL	85	1672	Interior	Nonrural
Fox	ADOL	85	189	Interior	Nonrural
Harding Lake CDP	ADOL	85	58	Interior	Nonrural
Moose Creek CDP	ADOL	85	803	Interior	Nonrural
North Pole	ADOL	85	1640	Interior	Nonrural
Salcha	ADOL	85	533	Interior	Nonrural
Two Rivers	ADOL	85	523	Interior	Nonrural
TOTAL			77766		
JUNEAU	ADOL	85	26270	Southeast	Nonrural
KETCHIKAN AREA					
Balance of Ketchikan Census Area	ADOL	85	850	Southeast	Nonrural
Ketchikan*	ADOL	85	11125	Southeast	Nonrural
TOTAL			11975		
ANCHORAGE	ADOL	85	235269	Southcentral	Nonrural
MATANUSKA-SUSITNA					
Bal.of Matanuska-Susitna CA*	ADOL	85	25528	Southcentral	Nonrural
Big Lake	ADOL	85	610	Southcentral	Nonrural
Bodenburg Butte CDP	ADOL	85	1232	Southcentral	Nonrural
Houston	ADOL	85	725	Southcentral	Nonrural
Montana Census Designated Place	ADOL	85	103	Southcentral	Nonrural
Palmer	ADOL	85	3016	Southcentral	Nonrural
Sutton	ADOL	85	340	Southcentral	Nonrural
Talkeetna	ADOL	85	269	Southcentral	Nonrural
Wasilla	ADOL	85	3666	Southcentral	Nonrural
Willow	ADOL	85	494	Southcentral	Nonrural
TOTAL			35983		
PRINCE WILLIAM SOUND					
Valdez	ADOL	85	3271	Southcentral	Nonrural
Whittier	ADOL	85	344	Southcentral	Nonrural
TOTAL			3615		
UPPER KENAI PENINSULA					
Anchor Point	ADOL	85	327	Southcentral	Nonrural
Bal.of Kenai-Cook Inlet CSA	ADOL	85	12821	Southcentral	Nonrural
Bal.of Seward Census Sub-Area	ADOL	85	303	Southcentral	Nonrural
Clam Gulch	ADOL	85	160	Southcentral	Nonrural
Cooper Landing	ADOL	85	386	Southcentral	Nonrural
Fritz Creek Census Designated Pla	ADOL	85	1610	Southcentral	Nonrural
Halibut Cove	ADOL	85	52	Southcentral	Nonrural

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

	SOURCE	YEAR	1985 COMMUNITY POPULATION	REGION	RURAL STATUS
Homer	ADOL	85	3632	Southcentral	Nonrural
Hope	ADOL	85	224	Southcentral	Nonrural
Jakolof Bay CDP	ADOL	85	81	Southcentral	Nonrural
Kachemak City	ADOL	85	338	Southcentral	Nonrural
Kalifonsky Census Designated Plac	ADOL	85	332	Southcentral	Nonrural
Kasilof	ADOL	85	643	Southcentral	Nonrural
Kenai	ADOL	85	6518	Southcentral	Nonrural
Moose Pass	ADOL	85	145	Southcentral	Nonrural
Nikishka	ADOL	85	1630	Southcentral	Nonrural
Ninilchik	ADOL	85	451	Southcentral	Nonrural
Salamatof Census Designated Plac	ADOL	85	737	Southcentral	Nonrural
Seward	ADOL	85	2152	Southcentral	Nonrural
Soldotna	ADOL	85	3818	Southcentral	Nonrural
Sterling	ADOL	85	1732	Southcentral	Nonrural
TOTAL			38092		
TOTAL RURAL			110100		
TOTAL URBAN			428970		
			539070		

APPENDIX TABLE 27. POPULATION OF ALASKA COMMUNITIES BY REGION
(CONTINUED) AND RURAL STATUS 1985

* Adjustments to Alaska Department of Labor places to conform to ADFG Division of Subsistence places.

Southeast

Annette CDP 158 added to Metlakatla
Balance of Angoon CSA adjusted -64 added to Angoon
Balance of Haines CA adjusted -840 added to Haines
Balance of Hoonah-Yakutat CSA adjusted-226 added to Yakutat
Balance of Outer Ketchikan CSA adjusted -8 added to Hyder.
Balance of Skagway CSA adjusted -27 added to Skagway
Balance of Prince of Wales CSA adjusted -66 added to Edna Bay, 75 added to Hollis, 207 added to Craig,. 103 added to Klawock.
Kupreanof City-41 added to Petersburg
Balance of Ketchikan CA adjusted - 449 added for Saxman East.
Ketchikan includes:Clover Pass (547), Herring Cove (120), Ketchikan East (469), Mountain Point (480), North Tongass Highway (2089), and Pennock Island (109).
Balance of Petersburg Census Subarea adjusted - 44 added as Beecher Pass.

Prince William Sound

Balance of Prince William Sound Census Sub-area adjusted-removed 17, added 17 as San Juan Bay removed 30 for Chenega Bay.
Cordova adjusted to include Eyak (44), and Balance of Cordova CSA (362)

Bristol Bay

Balance of Dillingham Census Area adjusted-removed 10: added 10 as Ugashik
Balance of Bristol Bay Census Area-removed 67: added 67 as Port Alsworth/Lake Clark

Copper River Basin

Balance of Copper River Census Sub-Area adjusted-removed all: added communities as follows:
East Glenn Hwy (217), Kenny Lake(321), Lake Louise(39), McCarthy (38), Mentasta Pass (26), Nabesna Rd(37), North Slana Homestead(61), South Slana Homestead (186), South Wrangell Mts (48) West Glenn Hwy(281), Paxson-Sourdough (+32 to match ADFG communnities).
Removed 13 from Balance of Copper River Census Sub-area for Chisana, in ADFG Upper Tanana subregion.
Tazlina adjusted-added 327 to ADOL to reflect community as identified by ADFG
Lower Tonsina removed-population included in Chitina & Kenny Lake.
Mentasta Lake included in CPDB place Mentasta.
Total subtracted from Balance of Copper River Census Sub-Area = 1569

Matanuska-Susitna

Balance of Matanuska-Susitna Census Area adjusted by 524, to reflect ADFG community definitions of Lake Louise, West Glenn Hwy, and others.
Balance of Matanuska-Susitna Census Area adjusted by 30, for portion of population of Chenega Bay, (additional 30 at Chenega Bay removed from Prince William Sound CSA), by 78 for Chase, 165 for Western Sustina, 41 for Hurricane-Broad Pass, 12 for Gold Creek.

Upper Yukon-Koyukuk-Lower Tanana

Balance of Koyukuk-Middle Yukon Census Subarea adjusted for Wiseman (25) and Lake Minchumina (35)

APPENDIX TABLE 27. (CONTINUED) POPULATION OF ALASKA COMMUNITIES BY REGION AND RURAL STATUS 1985

* Adjustments to Alaska Department of Labor places to conform to ADFG Division of Subsistence places.

Southeast

Annette CDP 158 added to Metlakatla
Balance of Angoon CSA adjusted -64 added to Angoon
Balance of Haines CA adjusted -840 added to Haines
Balance of Hoonah-Yakutat CSA adjusted-226 added to Yakutat
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East Glenn Hwy (217), Kenny Lake(321), Lake Louise(39), McCarthy (38), Mentasta Pass (26), Nabesna Rd(37), North Slana Homestead(61), South Slana Homestead (186), South Wrangell Mts (48) West Glenn Hwy(281), Paxson-Sourdough (+ 32 to match ADFG communnities).
Removed 13 from Balance of Copper River Census Sub-area for Chisana, in ADFG Upper Tanana subregion.
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Total subtracted from Balance of Copper River Census Sub-Area = 1569

Matanuska-Susitna

Balance of Matanuska-Susitna Census Area adjusted by 524, to reflect ADFG community definitions of Lake Louise, West Glenn Hwy, and others.
Balance of Matanuska-Susitna Census Area adjusted by 30, for portion of population of Chenega Bay, (additional 30 at Chenega Bay removed from Prince William Sound CSA), by 78 for Chase, 165 for Western Sustina, 41 for Hurricane-Broad Pass, 12 for Gold Creek.

Upper Yukon-Koyukuk-Lower Tanana

Balance of Koyukuk-Middle Yukon Census Subarea adjusted for Wiseman (25) and Lake Minchumina (35)

APPENDIX TABLE 28. 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
ALEUTIAN ISLANDS				
Adak Station	4633	1019	0.0	0
Akutan	589	31	56.0	17
Amchitka	25	0	0.0	0
Atka	98	30	56.0	17
Balance of Aleutians East Borough	247	64	56.0	36
Balance of Aleutians West Census Area	33	3	56.0	2
Cold Bay	148	54	56.0	30
False Pass	68	23	50.0	12
King Cove	451	88	56.0	49
Nelson Lagoon	83	31	69.2	21
Nikolski	35	19	56.0	11
Saint George	138	45	56.0	25
Saint Paul	763	154	56.0	86
Sand Point	878	242	56.0	136
Shemya Station Census Designated Place	664	0	0.0	0
Unalaska	3089	575	56.0	322
Subtotal	11942	2378		764
NOTES ON UNSURVEYED COMMUNITIES: ALASKA PENINSULA MEAN USED (56%), EXCEPT MILITARY STATIONS (0%)				
YUKON-KUSKOKWIM DELTA				
Akiachak	483	112	68.5	77
Akiak	285	67	68.5	46
Alakanuk	544	121	85.7	104
Aniak	540	159	68.5	109
Atmautluak	258	53	88.2	47
Balance of Aniak Census Sub-Area	71	29	68.5	20
Balance of Lower Kuskokwim Census Sub-Are	10	3	68.5	2
Balance of Wade Hampton Census Sub-Area	17	4	87.9	4
Bethel	4674	1432	33.1	474
Chefornak	320	64	87.9	56
Chevak	598	147	87.9	129
Chuathbaluk	97	28	68.5	19
Crooked Creek	106	33	68.5	23
Eek	254	72	87.9	63
Emmonak	642	161	88.9	143
Goodnews Bay	241	66	83.3	55
Hooper Bay	845	190	87.9	167
Kasigluk	425	89	88.2	78
Kipnuk	470	99	87.9	87
Kongiganak	294	60	87.9	53
Kotlik	461	101	92.9	94
Kwethluk	558	127	68.5	87
Kwigillingok	278	62	87.9	54
Lime Village	42	14	68.5	10
Lower Kalskag	291	67	68.5	46
Marshall (Fortuna Ledge)	273	70	87.5	61
Mekoryuk	177	63	87.9	55
Mountain Village	674	148	87.5	130
Napakiak	318	81	68.5	55
Napaskiak	328	74	68.5	51

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
Newtok	207	42	87.9	37
Nightmute	153	29	87.9	25
Nunapitchuk	378	87	88.2	77
Oscarville	57	15	68.5	10
Pilot Station	463	100	87.5	88
Pitka's Point	135	37	87.5	32
Platinum	64	22	83.3	18
Quinhagak	501	127	83.3	106
Red Devil	53	18	68.5	12
Russian Mission	246	56	87.5	49
Saint Marys (Andreafsky)	441	118	87.5	103
Scammon Bay	343	85	87.9	75
Sheldon Point	109	27	100.0	27
Sleetmute	106	33	68.5	23
Stony River	51	19	68.5	13
Toksook Bay	420	88	87.9	77
Tuluksak	358	74	68.5	51
Tuntutuliak	300	70	87.9	62
Tununak	316	78	87.9	69
Upper Kalskag	172	48	68.5	33
Subtotal	19447	4969		3385
NOTES ON UNSURVEYED COMMUNITIES: KWETHLUK FOR KUSKOKWIM, TUNUNAK FOR MID-COAST, QUINHAGAK FOR SOUTH BAY, BETHEL AT 48.3% OF KWETHLUK, NUNAPITCHUK FOR TUNDRA, MT. VILLAGE FOR YUKON				
ALASKA PENINSULA				
Balance of Bristol Bay Census Area	3	2	34.8	1
Chignik Bay	188	46	47.4	22
Chignik Lagoon	53	17	52.9	9
Chignik Lake	133	34	60.9	21
Egegik	122	48	52.0	25
Igiugig	33	13	66.7	9
Ivanof Bay	35	9	83.3	7
King Salmon	696	158	34.8	55
Naknek	575	208	34.8	72
Perryville	108	31	55.0	17
Port Heiden	119	42	45.9	19
South Naknek	136	39	34.8	14
Ugashik	7	4	80.0	3
Subtotal	2208	651		274
NOTES ON UNSURVEYED COMMUNITIES: MEAN OF BRISTOL BAY USED (34.8%) FOR KING SALMON-NAKNEK-S. NAKNEK				
PARKS HIGHWAY				
Anderson	628	135	10.4	14
Balance of Denali Borough	162		8.2	0
Cantwell	147	62	8.2	5
Ferry	56	23	8.2	2
Healy	487	161	8.6	14
Lignite	99	37	8.2	3
McKinley Park Village	171	87	3.1	3
Subtotal	1750	505		41
NOTES ON UNSURVEYED COMMUNITIES: MEAN OF PARKS HIGHWAY USED (8.2%)				

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
BRISTOL BAY-ILIAMNA				
Aleknagik	185	57	47.4	27
Balance of Dillingham Census Area	32	15	47.4	7
Balance of Lake and Peninsula Borough	31	17	47.4	8
Clark's Point	60	18	47.4	9
Dillingham	2017	691	22.9	158
Ekwok	77	30	41.4	12
Iliamna	94	30	10.0	3
Kokhanok	152	38	47.4	18
Koliganek	181	47	66.7	31
Levelock	105	39	51.9	20
Manokotak	385	90	88.9	80
New Stuyahok	391	88	67.5	59
Newhalen	160	36	18.2	7
Nondalton	178	54	57.1	31
Pedro Bay	42	17	35.3	6
Pilot Point	53	17	76.5	13
Port Alsworth	55	17	23.1	4
Portage Creek	5	3	47.4	1
Togiak	613	151	47.4	72
Twin Hills	66	25	47.4	12
Subtotal	4882	1480		579
NOTES ON UNSURVEYED COMMUNITIES: MODE OF BRISTOL BAY USED (47.4%)				
SOUTHEAST ARCHIPELAGO				
Angoon	638	156	7.7	12
Annette	43	12	15.9	2
Balance of Angoon Census Sub-Area	19	8	14.3	1
Balance of Haines Census Area	707	262	14.3	37
Balance of Hoonah-Yakutat Census Sub-Area	311	106	14.3	15
Balance of Outer Ketchikan Census Sub-Area	21	8	14.3	1
Balance of Petersburg Census Sub-Area	225	88	14.3	13
Balance of Prince of Wales Census Sub-Area	442	128	14.3	18
Balance of Skagway Census Sub-Area			14.3	0
Balance of Wrangell Census Sub-Area	87	28	14.3	4
Coffman Cove	186	73	10.5	8
Covenant Life Census Designated Place	47	15	13.9	2
Craig	1260	444	6.2	28
Cube Cove	156	34	14.3	5
Dora Bay	57	11	14.3	2
Edna Bay	86	25	50.0	13
Elfin Cove	57	23	0.0	0
Freshwater Bay	68	12	14.3	2
Game Creek Census Designated Place	61	14	14.3	2
Gustavus	258	101	22.5	23
Haines	1238	476	13.9	66
Hobart Bay	187	55	14.3	8
Hollis	111	43	20.2	9
Hoonah	795	242	17.7	43
Hydaburg	384	118	7.5	9

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
Hyder	99	45	30.3	14
Kake	700	220	10.8	24
Kasaan	54	19	14.3	3
Klawock	722	241	11.2	27
Klukwan	129	36	7.1	3
LaBouchere Bay	149	46	14.3	7
Long Island	198	48	14.3	7
Lutak Census Designated Place	45	17	14.3	2
Metlakatla	1426	437	15.9	69
Meyers Chuck	37	13	20.0	3
Mosquito Lake Census Designated Place	80	21	13.9	3
Naukati Bay	93	36	14.3	5
Pelican	222	81	20.3	16
Petersburg	3230	1147	30.7	352
Point Baker	39	21	31.6	7
Polk Inlet	135	30	14.3	4
Port Alexander	119	39	14.8	6
Port Alice	30	10	14.3	1
Port Protection	62	29	16.0	5
Rowan Bay	133	33	14.3	5
Saint John's Harbor	69	17	14.3	2
Sitka	8588	2939	6.1	179
Skagway	692	285	6.2	18
Tenakee Springs	94	51	25.8	13
Thorne Bay	569	196	21.0	41
Whale Pass	75	28	22.2	6
Whitestone Logging Camp	164	43	14.3	6
Wrangell	2479	946	17.0	161
Yakutat	534	175	29.5	52
Subtotal	28410	9731		1361
NOTES ON UNSURVEYED COMMUNITIES: MEAN OF SOUTHEAST USED (14.3%)				
KODIAK ISLAND				
Akhiok	77	19	95.2	18
Balance of Kodiak Island Census Sub-Area	3220	1066	10.3	110
Chiniak	69	23	17.6	4
Karluk	71	18	75.0	14
Kodiak City	6365	2051	10.3	211
Kodiak Coast Guard Station	2025	414	5.3	22
Larsen Bay	147	44	50.0	22
Old Harbor	284	87	81.6	71
Ouzinkie	209	68	68.8	47
Port Lions	222	73	60.0	44
Women's Bay	620	220	10.3	23
Subtotal	13309	4083		585
NOTES ON UNSURVEYED COMMUNITIES: KODIAK CITY USED FOR ROADED AREAS AND WOMEN'S BAY				
SEWARD PENINSULA-NORTON SOUND				
Balance of Nome Census Area	92	38	32.8	12
Brevig Mission	198	53	80.0	42
Council	8	3	67.9	2

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
Diomede	178	41	67.9	28
Elim	264	73	67.9	50
Gambell	525	120	67.9	81
Golovin	127	42	78.8	33
Koyuk	231	61	67.9	41
Nome	3500	1119	32.8	367
Port Clarence	26	0	67.9	0
Saint Michael	295	69	67.9	47
Savoonga	519	116	67.9	79
Shaktoolik	178	46	67.9	31
Shishmaref	456	119	47.6	57
Solomon	6	4	67.9	3
Stebbins	400	86	91.7	79
Teller	230	67	67.9	45
Unalakleet	714	207	67.9	141
Wales	161	49	67.9	33
White Mountain	180	58	67.9	39
Subtotal	8288	2371		1211
NOTES ON UNSURVEYED COMMUNITIES: MEAN USED (67.9%), EXCEPT NOME AT 48.3% OF MEAN				
ARCTIC SLOPE				
Anaktuvuk Pass	259	75	71.4	54
Atqasuk	216	52	71.4	37
Balance of Barrow-Point Hope Census Sub-Are	13	2	0.0	0
Balance of Prudhoe Bay-Kaktovik Census Sub-	101	5	0.0	0
Barrow	3469	1059	32.7	346
Deadhorse	26	2	0.0	0
Kaktovik	224	67	71.4	48
Nuiqsut	354	91	85.5	78
Point Hope	639	143	71.4	102
Point Lay	139	44	77.4	34
Prudhoe Bay	47	0	0.0	0
Wainwright	492	133	53.0	70
Subtotal	5979	1673		769
NOTES ON UNSURVEYED COMMUNITIES: MODE USED (71.4%), EXCEPT INDUSTRIAL ENCLAVES (0%)				
NORTHWEST ARCTIC				
Ambler	311	71	79.9	57
Balance of Northwest Arctic Borough	122	38	79.9	30
Buckland	318	69	79.9	55
Deering	157	44	79.9	35
Kiana	385	91	79.9	73
Kivalina	317	67	79.9	54
Kobuk	69	18	79.9	14
Kotzebue	2751	764	38.6	295
Noatak	333	74	79.9	59
Noorvik	531	107	79.9	85
Selawik	596	129	79.9	103
Shungnak	223	54	79.9	43
Subtotal	6113	1526		904
NOTES ON UNSURVEYED COMMUNITIES: KOTZEBUE ASSUMED 48.3% OF VILLAGES (79.9%)				

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
UPPER TANANA				
Alcan	27	10	31.6	3
Dot Lake	70	21	26.7	6
Dry Creek	106	26	31.6	8
Eagle	168	66	31.6	21
Eagle Village	35	20	31.6	6
Healy Lake	47	14	31.6	4
Northway	123	32	62.2	20
Northway Junction	88	25	62.2	16
Northway Village	113	30	62.2	19
Tanacross	106	35	44.4	16
Tetlin	87	28	49.7	14
Tok	935	367	22.0	81
Subtotal	1905	674		213
NOTES ON UNSURVEYED COMMUNITIES: UPPER TANANA MEAN USED (31.6%)				
COPPER BASIN				
Balance of Copper River Census Sub-Area	504	227	6.9	16
Chistochina	60	20	7.1	1
Chitina	49	22	5.6	1
Copper Center	449	166	6.3	10
Copperville	163	49	6.9	3
Gakona	25	7	8.7	1
Glennallen	451	163	3.1	5
Gulkana	103	42	15.0	6
Kenny Lake	423	127	4.9	6
McCarthy	25	12	11.8	1
Mendaltna	37	15	6.9	1
Mentasta Lake	96	33	12.5	4
Paxson	30	13	42.9	6
Slana	63	25	0.0	0
Tazlina	247	80	6.7	5
Tonsina	38	13	9.6	1
Subtotal	2763	1014		69
NOTES ON UNSURVEYED COMMUNTIES: COPPER BASIN MEAN USED (6.9%)				
UPPER YUKON-KOYUKUK-LOWER TANANA				
Alatna	31	13	80.0	10
Allakaket	138	46	80.0	37
Anvik	82	32	77.0	25
Arctic Village	96	36	77.0	28
Balance of Koyukuk-Middle Yukon Census Sub	427	222	77.0	171
Balance of McGrath-Holy Cross Census Sub-Ar	56	21	77.0	16
Balance of Yukon Flats Census Sub-Area	91	37	77.0	28
Beaver	103	43	83.9	36
Bettles/Evansville	69	32	15.0	5
Birch Creek	42	15	77.0	12
Central	52	27	77.0	21
Chalkyitsik	90	33	77.0	25
Circle	73	23	77.0	18

APPENDIX TABLE 28 (CONT.). 1990 POPULATIONS, PERCENT OF HOUSEHOLDS HARVESTING MIGRATORY BIRDS, AND ESTIMATED NUMBER OF HUNTERS

COMMUNITY	1990 POPULATION	NUMBER HOUSEHOLDS	PERCENT HOUSEHOLDS HARVESTING	ESTIMATED NUMBER HUNTERS
Circle Hot Springs Station	29	14	77.0	11
Fort Yukon	580	205	66.6	137
Galena	833	190	47.3	90
Grayling	208	51	77.0	39
Holy Cross	277	86	77.0	66
Hughes	54	22	78.9	17
Huslia	207	62	69.6	43
Kaltag	240	63	77.0	49
Koyukuk	126	40	77.0	31
Lake Minchumina	32	12	77.0	9
Manley Hot Springs	96	46	77.0	35
McGrath	528	175	77.0	135
Minto	218	66	82.2	54
Nenana	393	140	77.0	108
Nikolai	109	40	77.0	31
Nulato	359	90	77.0	69
Rampart	68	24	77.0	18
Ruby	170	61	77.0	47
Shageluk	139	42	77.0	32
Stevens Village	102	37	80.0	30
Takotna	38	15	77.0	12
Tanana	345	123	45.4	56
Telida	11	3	77.0	2
Venetie	182	50	77.0	39
Wiseman	33	11	77.0	8
Subtotal	6727	2248		1600
NOTES ON UNSURVEYED COMMUNITIES: REGION'S MODE USED (77.0%)				
PRINCE WILLIAM SOUND				
Balance of Cordova Census Sub-Area	297	106	26.0	28
Balance of Prince William Sound Census Sub-	86	26	26.0	7
Chenega Bay	94	29	62.5	18
Cordova	2110	773	24.3	188
Eyak	172	55	24.3	13
Tatitlek	119	33	47.4	16
Subtotal	2878	1022		269
NOTES ON UNSURVEYED COMMUNITY: PRINCE WILLIAM SOUND MEAN USED (26.0%)				
UPPER COOK INLET				
Skwentna (Western Susitna)	85	31	25.0	8
Tyonek	154	55	36.0	20
Subtotal	239	86		28
LOWER KENAI PENINSULA				
English Bay	158	42	39.4	17
Port Graham	166	60	35.2	21
Seldovia	316	129	8.6	11
Subtotal	640	231		49